CA2 ON
CR 300

A51
c2

NEW SERIES

11TH ANNUAL
ARCHAEOLOGICAL REPORT

ONTARIO 2000

106-01003/

ANNUAL ARCHAEOLOGICAL
REPORT, ONTARIO

Volume 11(New Series) 2000

Volumes in the New Series of the Annual Archaeological report, Ontario are published annually by the Ontario Heritage Foundation, a not-for-profit agency of the government of Ontario.

© Ontario Heritage Foundation 2002
All rights reserved
CN ISSN 1181-9057

No part may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, microfiching, recording or otherwise, without the permission of the publisher.
Printed in Canada.

Front Cover Illustration:
Davenport tea saucer, pearlware. Recovered from Victoria Park, London, Ontario. Illustration submitted by Dana Poulton & Associates.

Copies may be ordered from:

Ontario Heritage Foundation
Archaeology Publications
10 Adelaide St.E.,
Toronto, ON
M5C 1J3

Printed in Canada

ANNUAL ARCHAEOLOGICAL REPORT, ONTARIO

VOLUME 11 (NEW SERIES) 2000

DENA DOROSZENKO
EDITOR

The Ontario Heritage Foundation seeks to preserve, protect and promote Ontario's archaeological, architectural, cultural, historical and natural heritage for the benefit and enjoyment of present and future generations of Canadians.

A not-for-profit agency of the government of Ontario, the Ontario Heritage Foundation was established by the Province of Ontario in 1968 and operates under the Ontario Heritage Act.

These abstracts will be of interest to those members of the general public who want to learn about the prehistoric and historic record of Ontario and will be a valuable reference tool to archaeologists as well as specialists in many other professions.

LEGISLATIVE LIBRARY OF ONTARIO
TORONTO
APR 2 8 2003
RECEIVED

FROM THE EDITOR

This issue is the eleventh volume of the Annual Archaeological Report, Ontario (AARO), a continuation, in a new form, of a series originally published by the provincial government between 1887 and 1928. This volume contains reports on archaeological work conducted in the Province of Ontario during 1999.

In Volume 10, a contribution was unfortunately omitted and is included within this volume with apologies to the author, Caroline Phillips of Parks Canada.

Layout and design of this volume was conducted in-house by the editor. I would like to thank Beth Hanna and Jonah Reimer for assisting in proofreading this volume. I am also grateful to Manuel Oliveira for his assistance with the graphics for this volume, particularly the cover.

Dena Doroszenko

CONTENTS

From the Editor
Contents i

CONSULTING ACTIVITIES

Susan M. Bazely
Cataraqui Archaeological Research Foundation:
1999 Consulting Activities 1

Hugh J. Daechsel
1999 Heritage Quest Inc. Consulting Projects 7

J.Trevor Hawkins and Robert G. Mayer
Mayer Heritage Consulting Inc: A "Gestalt" Approach in Which
The Sum of all of the Assessments Proves Not to Be the Complete Story 10

Lawrence Jackson and Donna Morrison
Northeastern Archaeological Associates 30

Eva MacDonald, Robert I. MacDonald, Heidi Ritscher , David R. Robertson and Ronald. F. Williamson
Summary of 1999 Research by Archaeological Services Inc. 37

Donna Morrison and Lawrence Jackson
Lynde House: The Evolution of an 1812 Tavern and Homestead in Whity, Ontario 52

Robert "Bud" Parker
1999 Consulting Work in Ontario 57

Robert J. Pearce
Consulting Activities Undertaken in 1999 by The London Museum of Archaeology 58

John Pollock and Luke Dalla Bona
Consulting Activities of Woodland Heritage Services and Settlement Surveys Ltd. in Northern Ontario. 64

Dana R. Poulton and Christine F. Dodd
Summary of 1999 Archaeological Investigations by D.R. Poulton & Associates Inc. 71

FIELD SCHOOLS

Susan M. Bazely
Cataraqui Archaeological Research Foundation 1999 Field School 79

Susan M. Jamieson
Trent University Field School at the Bark Site (BhGp-12) 84

Martha A. Latta
Summer at the Beach: 1999 Excavations at the Ashbridge Estate, AjGt-1 90

John R. Triggs
The Bare Essentials - A Tent, a Cookhouse and a Latrine: Wilfred Laureier Archaeological Field School at Discovery Harbour 94

Gary Warrick
The 1999 University of Toronto at Mississauga Field School at the Meyer Site (AfGx-26), Regional Municipality of Haldimand-Norfolk 102

SITE/PROJECT SPECIFIC ACTIVITIES

Henry C. Cary
The Commons at Fort George National Historic Site: 1999 Archaeological Project Summary 105

Dena Doroszenko
Ontario Heritage Foundation: 1999 Fieldwork 114

Charles Garrad
Petun Area 1999 119

Joseph Last
Military Sites Archaeology, Parks Canada,
Ontario Service Centre: 1999 123

Stephen Mills
Summary of the 1999 Archaeological Investigations at the
Alexander MacKenzie Grave Site, Sarnia, Ontario 137

Jonathan Moore
Delta Mill (BdGa-34) 144

Caroline Phillips
Laurier House Archaeolgy 1998 - 9, National Historic Site
of Canada, Ottawa and the Blacksmith's Midden, Plaza Bridge,
Ottawa Locks, Rideau Canal National Historic Site of Canada 146

Brian D. Ross and Cesare D'Annibale
National Parks and Native Sites Archaeology, Parks Canada,
Ontario Service Centre: 1999 151

A BIBLIOGRAPHY OF PEER-REVIEWED ARTICLES, BOOKS AND DISSERTATIONS ON THE ARCHAEOLOGY OF ONTARIO : 1999 170

CONSULTING ACTIVITIES:
CATARAQUI ARCHAEOLOGICAL RESEARCH FOUNDATION: 1999 CONSULTING ACTIVITIES

SUSAN M. BAZELY

Continuing to fulfill its mandate in cultural resource management through archaeological research and conservation, the Cataraqui Archaeological Research Foundation maintains involvement in consulting in Ontario. During 1999 Foundation archaeologists and historical researchers were involved with assessment and mitigation projects in Central and Eastern Ontario. These include: Stage 1 Assessment for Highway 7 in Peterborough (Bazely, 2000); Stage 2 Assessment for a Sewage System in Winchester (Kennett, 2000); monitoring during environmental testing in the historic hamlet of Charlesville now Kingston (Bazely, 1999a); and monitoring of the removal of coal tar from Kingston's 1840s coal gasification plant built adjacent to Fort Frontenac (Moore & Bazely, 2000).

THE WOOD HOUSE & LAMOUREUX PARK, CORNWALL

The proposed relocation of the Wood House from Second Avenue on the Domtar Fine Papers property to Lamoureux Park south of Water Street between York and Augustus Streets in Cornwall, required that a Stage 1 and 2 Archaeological Assessment be conducted for both locations. The Cataraqui Archaeological Research Foundation was contracted by the Stormont, Dundas and Glengarry Historical Society to conduct this work. The following summarizes the objectives and findings for each property.

Cataraqui Archaeological Research Foundation
370 King St. W.,
Kingston, ON K7L 2X4

WOOD HOUSE SITE BGFQ-10

The stone one and a half storey house was constructed by Loyalist William Wood in the 1840s. Unfortunately, the archival evidence to support this is limited. The main objectives of the archaeological assessment of the Wood House site were: to determine the level of historic grade for the purpose of future siting of the house; attempt to determine the association between the stone structure and the brick wing and construction dates; and recommend a period for restoration of the front and side verandas. A total of seven excavation units were opened in locations thought to provide access to the information sought through the objectives.

HISTORIC GRADE

It was determined that on the west side of the stone structure, historic grade was 21-23 centimetres below current grade (1A), that is to the base of the first course of cut stone. On the north side of the stone structure, historic grade

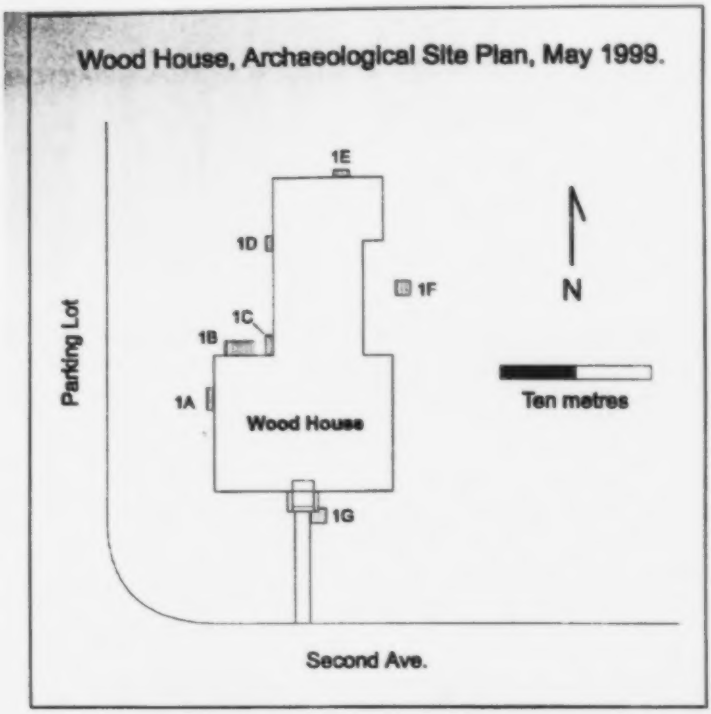


FIGURE 1. Wood House Site Plan

appeared to be between 23 and 40 centimetres below current grade or 1.05 to 1.20 metres below the limestone window sill of the northwest face of the stone structure. The lesser measurement was taken to the base of the first course of cut stone, while the greater was to the point at which the foundation thickens and slopes outward (1B, 1C). At the west side of the brick wing, historic grade was at least 24 centimetres below current grade. It was noted that stone flagging was encountered 50-55 centimetres below current grade in this location (1D). Although not further investigated, it was possible that the stone flagging pre-dated the construction and occupation of the brick wing. There was little early material recovered in these locations, most being late 19th and early 20th century.

Stone Structure & Brick Wing

The association between the stone structure and the brick wing of the Wood House remains unclear due primarily to a series of later disturbances at key points at the juncture between the two structures and inaccessibility of specific locations for archaeological investigation. Architecturally, the brick wing appeared to post-date the stone structure, but this was difficult to substantiate through archaeology. By interpreting the data that was uncovered, examining negative evidence and exploring a variety of theories stemming from the historical documentation, it is likely that the brick wing was added more than ten years after the con-

struction of the stone structure. A small summer kitchen including a bake oven and possibly a cistern, was probably enveloped by the brick wing as time went on, and as the need for additional activity areas was required, the structure increased in size.

At the northwest juncture the brick wing appeared to have been constructed on the east retaining wall of the basement entrance stairwell to the stone structure, suggesting continued use of the entrance while the brick wing was in use. Two stone steps within the stairwell were identified. In this location the foundation for the brick wing was of substantial cut limestone with some smaller material, not representative of the rest of the rubble stone foundation (1B, 1C) of both the stone and brick sections of the house.

The north portion of the brick wing appeared, from the interior, to be constructed on an earlier substantial masonry foundation. It was apparent that chronic water run-off impacted the stone foundation. While the juncture between this and the rest of the foundation was not apparent on the exterior below grade, it was at this point that the brick superstructure was cracking and failing (1D). A 50 centimetre thick layer of early 20th century fill was deposited at the north end of the brick wing (1E). As the ground sloped down to the northeast in this area it was unclear whether earlier cultural material was removed from this location.

While some disturbance was evident on the east side of the brick wing from the presence of a shallow (40 centimetres below current grade) metal pipe, the surrounding soil was fairly clean with almost no inclusions (1G). There was surprisingly little cultural material despite being located beside the "back" door adjacent to the bake oven.

Restoration Period

No evidence of earlier verandas was encountered. On the south facade or main entrance evidence of the last verandah was sparse. On the east side, the existing verandah appeared to be quite recent. Access was limited in this location by the presence of the existing verandah.

At the main entrance (1F) evidence of a removed post or post footing (southeast of entrance) was encountered in the approximate location of that depicted in two historic photographs. It is the earlier of the two photographs depicting members of the Wood family on the verandah that shows good detail. The aforementioned post appeared to be set on a stone base. It was noted that the verandas in the two photographs are quite different, with the earlier having a decorated front facing board and no railings and a wooden board walk leading to the first stone step. In the more recent photograph, the verandah appears quite dilapidated with wooden rails all around and a concrete walk. It does, however, show more detail on the top portion. No archaeological evidence of earlier structures was encountered and early archival material does not provide any information about a porch or verandah. It is likely that the verandas depicted in the photographs relate to the late Victorian period and later. The earliest and most datable artifact from this location was a token, but the context and association with more recent material do not support an early date of deposition.

Figure 2. Straight pin, shell and bone buttons from 1A4, Wood House.

FIGURE 3. Webster Credit Current 1841 /Van Buren Metallic Current 1837 US token from 1F1, Wood House.

LAMOUREUX PARK

The main objectives of the archaeological assessment of the Lamoureux Park site were: to identify and record any structural features related to earlier occupation of the property; allow for the integration of any significant subterranean features into the new facility; and to identify any areas for future work. A total of twenty-six test units were excavated on a 5 metre grid across the proposed site for relocation of the Wood House.

Through archival information, primarily cartographic and photographic, it was determined that the proposed site for the relocation of the Wood House was that of the 1850 Andrew Elliot mill (also the 1864 Hodge Mill) and not the Stormont Mill as originally suspected. The mill was located to the south of the former Cornwall canal.

Significant amounts of fill containing brick, limestone and mortar rubble were encountered to depths in excess of 1 metre. Fire Insurance plans indicate that the stone mill was 4 2 stories, typical for an automated mill. A photograph taken from the canal side looking southwest (*circa* 1923) clearly shows 3 stories above the tow path grade, while a 1947 photograph taken from the river side looking northeast indicates only 1 storey above tow path grade and 1 2 below grade. This view illustrates the size of the tail race, which appears almost like a ravine, and shows the lower stories below grade in the tail race. The 1 2 stories below grade and the remainder of the tail race would have been filled in during demolition of the structure.

Two test units, placed along an alignment of dried grass (i.e. crop mark) at the north edge of the property revealed the remains of limestone and concrete foundation walls. A north-south alignment of concrete, visible on the surface at the west edge of the property was believed to relate to one of the later additions. It is also possible that it was part of the mill race wall because it appeared to extend to the location of the canal. Maps and photographs indicate that no buildings extended across the tow path. East and west brick additions related to the operation of the buildings as a power generating plant.

The Hodge Mill was operated by the Stormont Electric Light & Power Company (1887) providing power for street lights and eventually the Cornwall Electric Street Railway. The Street Railway company built it's own generating station next to Hodge's mill (*circa* 1888). The generating station was closed in 1935. It is likely that any useable equipment would have been salvaged at this time and possibly the top storey removed. A photograph of Stormont Electric's first generating station (Hodge Mill and brick additions) in the Cornwall Electric Archives depicts a derelict one story structure, but the filled in windows of the second storey can be seen. It is not known when the structures were completely demolished, but it certainly predated the filling of the canal in 1971.

Due to the depth of fill, presumably in the wheel pit and tail race of the Hodge Mill, it was not possible to ascertain the exact location of the south wall of the mill structure. The east-west position was also not fixed due to the lack

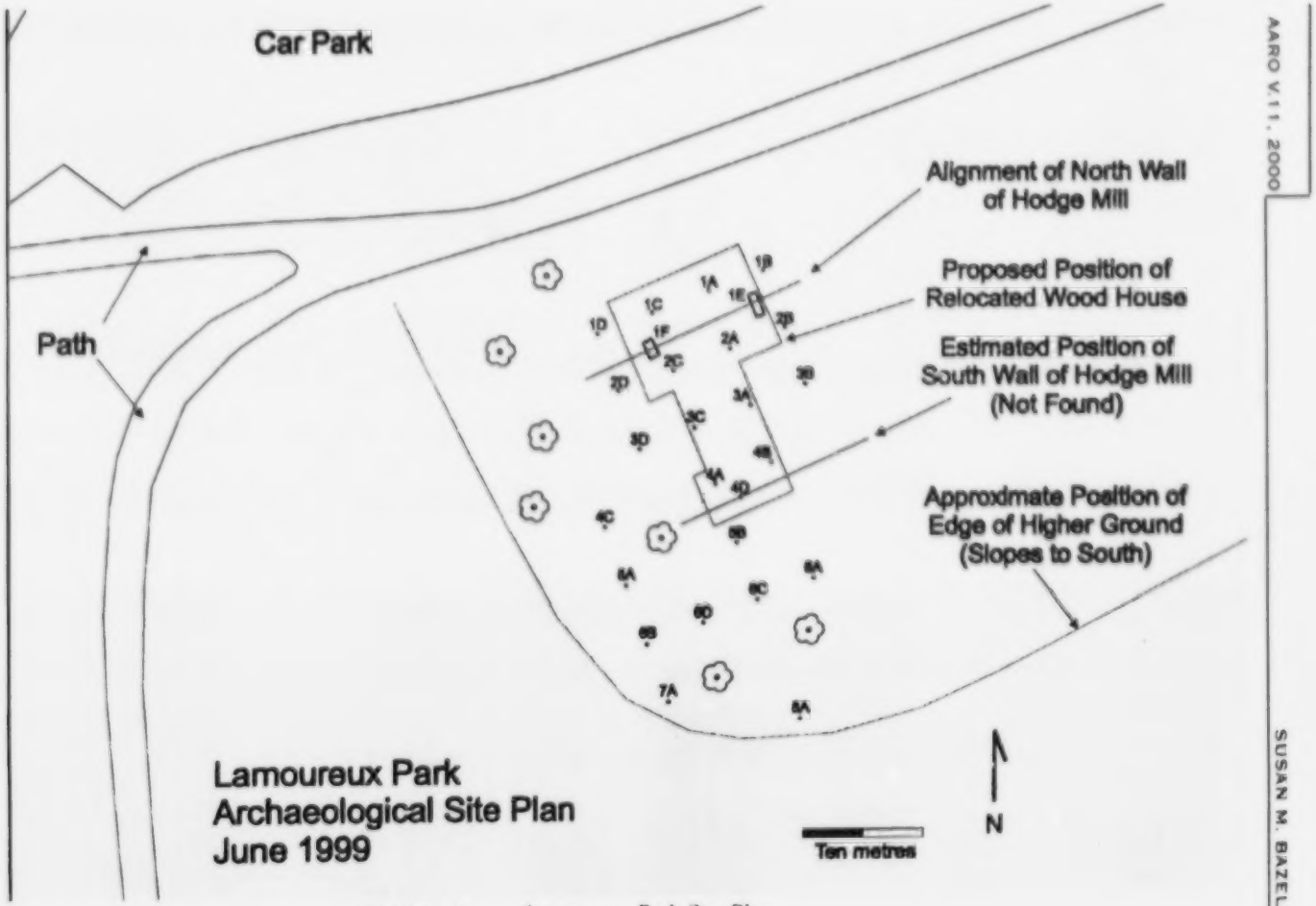

Car Park
Path
Alignment of North Wall of Hodge Mill
Proposed Position of Relocated Wood House
Estimated Position of South Wall of Hodge Mill (Not Found)
Approximate Position of Edge of Higher Ground (Slopes to South)
Lamoureux Park
Archaeological Site Plan
June 1999
Ten metres
N
AARO V.11, 2000
SUSAN M. BAZELY

FIGURE 4. Lamoureux Park Site Plan

of landmarks to sight on. In addition, the depth of the foundations of the Hodge Mill remain unknown.

The Wood House was moved subsequent to this assessment to Lamoureux Park. To date no further work involving new construction on the site has been undertaken.

REFERENCES

Bazely, Susan M.
2000. Stage 1 Archaeological & Heritage Assessment of Highway 7 from Highway 7B to Highway 134, Peterborough County W.P. 581-93-00/903-93-00. Unpublished manuscript report.

1999a. Social Services Development Rideaucrest Archaeological Monitoring Patrick Street, Kingston, Ontario. Unpublished manuscript report.

1999b. Wood House BgFq-10 Relocation Stage 1 & 2 Archaeological Assessment of the Wood House Property & Lamoureux Park Cornwall, Ontario. Unpublished manuscript report.

Kennett, Brenda L.
1999. Stage 2 Archaeological Assessment of the Township of North Dundas - Winchester Sewage System Project, Stormont, Dundas & Glengarry County, Ontario. Unpublished manuscript report.

Moore, Jonathan D. and Susan M. Bazely
2000. Archaeological Monitoring at the Kingston Coal Gasification Plant Site BbGc-78. Unpublished mansucript report

1999 Heritage Quest Inc. Consulting Projects

Hugh J. Daechsel

P.O.Box 456
Kingston, ON
K7L 4W5

Heritage Quest Inc., incorporated in 1992, undertook 27 projects through the 1999 field season. Stage 1 investigations included CFB Mountainview (Parachute Drop Zone), Highway 401 Moira River Crossing, Ottawa Hydro Transmission Line, Innes Rd (Ottawa) widening, installation of new film archives building at Shirely's Bay (Ottawa), landfill site expansion sites in South Glengarry, water transmission corridors in South Stormont and a gravel pit in Goulbourn Township. Stage 1/2 archaeological investigations included assessments of the Music Marina property (Kingston), the Clarence Landfill site expansion (Prescott Russell), the McCabe Street subdivision (Napanee) and a gravel pit expansion in Cornwall. A Stage 2 archaeological assessment was undertaken along Highway 15 between Portland and Lumbardy and Stage 3 assessments on the Chestnut Site (in conjunction with Archaeological Services Inc.) and the Music site both in Kingston. The field component of the Stage 4 investigation of the Chestnut Site was undertaken in conjunction with Archaeological Services Inc.

Archaeological monitoring exercises included two visits to the Centre Block on Parliament Hill, a return visit to the Peterborough Armoury and the investigation of a Privy removal and installation on Beaurivage Island (1000 Islands) for Parks Canada. Human remains were recovered from backdirt excavated at the Isaiah Tubbs Resort in Prince Edward County.

Music Marina Property

A Stage 1/2 archaeological assessment was undertaken on a 7 acre property located along the west bank of the Cataraqui River in Kingston. Previously identified on the property was a Late Woodland site initially recorded and investigated by James Pendergast in the early 1950's and subsequently assessed as part of the Kingston Archaeological Master Plan study by the Cataraqui Archaeological Research Foundation in 1988 (Stewart et al 1989). The 1999 assessment resulted in the identification of the parameters of the Kingston Outer Station site (BbGc-2) that covers an area of just over one acre.

Material recovered from the investigation confirmed the identification of the site as a multi component Late Woodland occupation, most likely a fishing station as was initially noted by Pendergast. Ceramics recovered from the Stage 2 assessment indicate Early, Middle and Late Iroquoian occupations at the

Kingston Outer Station. This site in addition to the Brothlin Site (investigated by Adams Heritage), situated along the Little Cataraqui Creek less than 7 kilometers west of the Outer Station, are evidence of the permanent residency of Iroquoian populations in the Kingston area.

The Stage 2 assessment (Daechsel 1999a) also resulted in the identification of the foundation for a nineteenth century stone wall (BbGc-75) that ran along the crest of a small ridge, approximately 100 meters west of the shoreline. Subsequent Stage 3 investigation of the site indicated that this structure extended 41 meters in length averaging just under 1 meter in thickness. The foundation consisted of rough cut limestone with evidence of cedar posts that ranged between 10 and 12 centimetres in thickness placed at 2 metre intervals. Artifacts recovered in association with the structure included late nineteenth - early twentieth century materials (Ironstones, Coarse Earthenwares and a hand molded bottle). Based upon available archaeological evidence and historic records it would appear that the wall was removed sometime in the late nineteenth or early twentieth century. Unfortunately available information provides few clues as to the reason for such an elaborate structure other than to suggest that it served to divide the property and possibly protect certain portions of the property from livestock.

Isaiah Tubbs Resort Burial

Archaeological recovery techniques were applied to retrieve human remains identified by the excavation of septic system at the Isaiah Tubbs Resort. The remains were initially observed when backdirt was returned to the excavated septic pit. The remaining portion of the backdirt, consisting of 50 yards of sand, was examined resulting in the recovery of portions of nine individuals (Daechsel and Ossenberg 1999). The presence of cut and wrought nails as well as fragments of wood in clear association with some of the remains indicated that the burials were Euro Canadian dating from the early to mid nineteenth century.

Dr. Nancy Ossenberg's analysis of the remains indicated that the population included an older male (55-65 years), two young to middle aged men (aged 20 –45), a middle aged female (28-32 years), a young adult female (18 – 22 years), an adolescent male (aged 11 –12 years), an infant (18 months) and a fetus (7 to 8 months). Historical research revealed that the property was acquired by Isaiah Tubbs in 1824 - 1826. The Tubbs family remained owners of the area until Hiram Tubbs (one Isaiah's sons) sold the lot in 1875 to Dolan Clapps. The only known reference to the historic cemetery is contained in the instrument of sale at that time.

Historic research of the Tubbs family (Gilchrist n.d.) indicated that Isaiah lost his youngest son, aged 11, to the cholera epidemic of 1832. Isaiah himself died in 1844 with no known place of burial. The historic documentation coupled with the physiological evidence strongly suggests that the adolescent male was Isaiah's son and the older male Isaiah himself. The identity of the other individuals remains unknown.

References

Daechsel, Hugh J.

1999a. "Stage 1/2 Archaeological Assessment Part Farm Lots 6/7 West Great Cataraqui River, Kingston, Ontario." Consultants report prepared by Heritage Quest Inc. for Mr. Brian Elyea.

1999b. "Stage 3 Investigation of Music Site (BbGc-75) and areas west of the Kingston Outer Station Site (BbGc-2) Farm Lot 6, West Great Cataraqui River, Kingston, Ontario."

Consultants report prepared by Heritage Quest Inc. for Mr. Brian Elyea.

Daechsel Hugh J. and Nancy Ossenberg
1999. "Archaeological Recovery of Human Remains and Assessment of Archaeological Potential, Isaiah Tubbs Resort Lot 7, Concession South Side of West Lake, Township of Hallowell,Prince Edward County." Consultants report prepared by Heritage Quest Inc. for Nearly Perfect Builders Ltd.

Gilchrist, Gill
n.d. *Isaiah Tubbs of Prince Edward County*. Fragments of History Series No. 2.

Steward, W. Bruce, Moorehead, Earl & Susan M. Bazely
1989. "Kingston Archaeological Master Plan Study Stage II Report." Prepared by the Cataraqui Archaeological Research Foundation for the City of Kingston.

MAYER HERITAGE CONSULTING INC.: A "GESTALT" APPROACH IN WHICH THE SUM OF ALL OF THE ASSESSMENTS PROVES NOT TO BE THE COMPLETE STORY

J. TREVOR HAWKINS AND ROBERT G. MAYER

Mayer Heritage Consultants Inc. (MHCI) offers full-range archaeology and heritage services in a number of broadly defined areas. This review treats studies done during 1999 having to do in large measure with 1) residential developments, 2) utilities, transportation and infrastructure, 3) investigations involving burials, and 4) mentor support activities. Some of the investigations fall naturally under more than one of these arbitrarily chosen classifications and some involve Aboriginal First Nation project consulting, monitoring activities, identification of burials, and cemetery delineation and conservation.

Mayer Heritage Consultants Inc. is a London-based Canadian company with its head office at Byron Heritage House in the west end Byron community of London, Ontario. Representation and facilities are maintained throughout Ontario and in Quebec to permit a very timely response to enquiries for service. For large projects such as those concerned with the continuing construction of the Blue Water Bridge support facilities at Point Edward or the monitoring of construction at London's downtown entertainment/arena, temporary field offices are established.

For most of the studies reported in this review (Figure 1), the findings are considered within a broader historical/heritage framework, and employ the gestalt concept borrowed from the discipline of psychology. In a sense, the studies attempt to look at the forest as well as at the trees. The investigative parameters of the first study contract stopped short of such a consideration however and allowed only a mild alluding to the richer socio-economic context. Others permitted a richer investigation of the whole associated story. Final reports for the investigations described in this summary were filed, as applicable, with the then Ministry of Citizenship, Culture and Recreation (OMCzCR), and also with other regulatory agencies.

291 Boler Road
London, ON
N6K 2J9

RESIDENTIAL DEVELOPMENTS

With the ongoing recovery of the home building industry, residential developments continued to be a significant portion of the year's workload. Some eighteen of the firm's archaeological investigations were concerned with proposed residential subdivisions and included lot severances and minor variances. Ten studies involved Stage 1 background research and/or a Stage 2 general survey. For seven properties, a Stage 3 investigation and/or a Stage 4 mitigative excavation was completed.

As is sometimes the case, an investigation may yield no truly significant archaeological resources, but nonetheless, when viewed in a context larger than just the survey itself, the

FIGURE 1. Locations of Projects Discussed

subject property is worthy of consideration in some greater detail. One such property involved the Stages 1 and 2 assessment (MHCI 1999a) of a 20-hectare (50 acre) site that earlier was cultivated farm land just north of the Village of Lambeth in Westminster Township, and is now within the municipal boundaries of the City of London. The site contained no previously registered archaeological sites. However, because there were 15 such registered sites within 2,000 metres of the property and because of the rolling topography and the closeness of Dingman Creek and intermittent contributory streams, the property exhibited high potential for the discovery of both pre-contact Aboriginal and Euro-Canadian archaeological resources. The standard pedestrian survey method at a five-metre interval was performed on the ploughed majority of the property. On a small, unploughed portion, the standard test-pit method was conducted at a five-metre interval. Whenever cultural material was found, the survey interval was reduced to one metre for a 20-metre radius around each findspot.

Five isolated single findspots containing non-diagnostic Aboriginal cultural material were found during the general survey. Four of these are pieces of Onondaga chert chipping detritus. The fifth is an end scraper of an unidentified gray-banded chert. None of these artifacts is diagnostic of a particular time period or cultural affiliation. No Euro-Canadian artifacts were found. With the request for the issuance of the usual letter of clearance releasing all of the study area for construction purposes, the study was, technically, complete.

But there are about this property, in its original configuration of 118 acres, aspects that merited further study. These factors might well be of value to those having an interest in historic or socio-economic matters, but until such time as these studies happen, the history of this small part of the township remains largely untold. The fact that no Euro-Canadian artifacts were found may be attributed to the practice along the Talbot Road of locating the farm residence and outbuildings mere metres from the road. And such was the case with this property located on the North Talbot Road (known variously as North Street, Talbot Road, and now Colonel Talbot Road), constructed as a communication road to connect Lambeth to Byron, some six kilometres to the north and giving easy access to the greater variety of mills located on the Thames River in Byron. To the

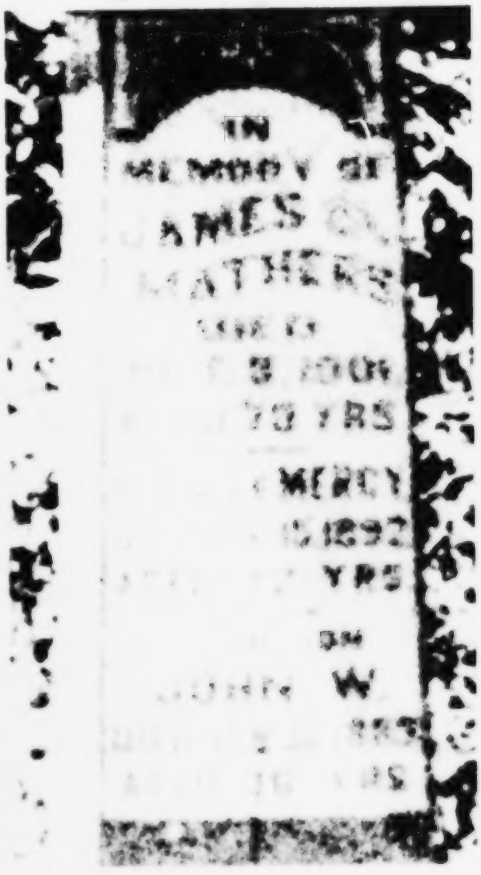


FIGURE 2. Mathers Family Memorial Column

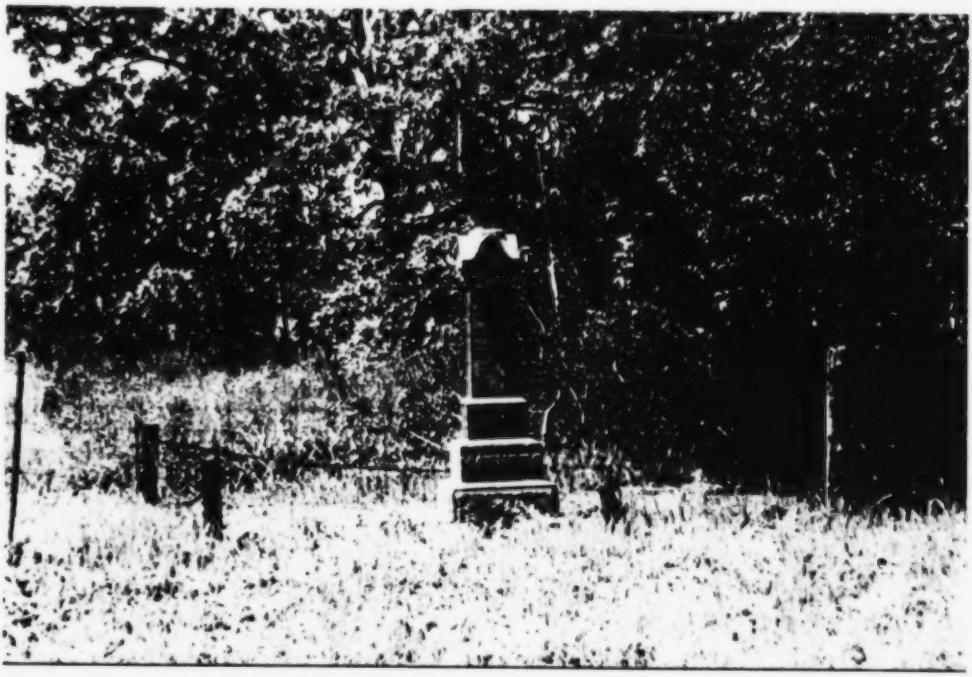


FIGURE 3. Mathers Family Memorial Column after landscaping

south, it connected with the London-Port Stanley Plank (toll) Road leading to the Lake Erie ports. The Talbot Road was an important communications link between the lake and the interior to the north.

Much of the history connected with this property is to be found in the original farm's two front corners which were excluded from the archaeological survey. The southeast portion of the frontage consists of an existing residential plot upon which an early farm residence (now expanded and modernized) and some outbuildings still stand. The Mathers family occupied this farm for many years. A number of news columns and other entries in the collected articles (Crinklaw et al, 1986) refer to various members of the Mathers family. For instance, the 1851 census summary shows that a Daniel Mathers occupied this property that contained a one-storey log house. An 1868 entry shows the property then to be occupied by James Mathers, as does the early township map (Page, 1878). Squire Mathers, as he was referred to, served as a Justice of the Peace. Other entries show that various members of the Mathers family attended the school just down the road, served in the militia, and served on the township council.

In the northeast corner of the property (excluded from the archaeological survey but forming a part of the proposed subdivision development) is the small Mathers family cemetery, which over the years became overgrown to the point of being virtually invisible to passersby. A memorial column (Figure 2) shows that interred here are James Mathers, his

wife Mercy, and their son John W. Mathers. The interments occurred between 1892 and 1901. The illumination of the family history, however incompletely known at this stage of investigation, has spurred an interest in this aspect of local history and the subdivision developer arranged for the cemetery to be tidied and to receive continuing landscaping care (Figure 3) so that travelers on this early communication road might once again know of this Lambeth pioneer family.

A number of residential subdivision studies involved Stage 3 or 4 investigations. One such Stage 4 study was conducted within the Beaver Valley Subdivision in the former Stamford Township and now in the City of Niagara Falls (MHCI 1999b). Previous Stages 1 and 2 investigations (MHCI 1997) and a Stage 3 site-specific investigation (MHCI 1999c), had identified the presence and limits of the James House homestead, circa 1795. Proving to be unamenable to any protective preservation process, it was subjected to a Stage 4 mitigative investigation. As in the study just described, this contract required no historic or socio-economic investigation beyond the information revealed by the artifacts themselves, some of this having been done in the Stages 1 to 3 fieldwork. However, starting with the archaeological findings, such a study could be continued by an interested researcher.

Unlike the Mathers study, the farm buildings here were located at a more usual distance from the road with the result that it was possible to glean a large number of Euro-Canadian artifacts from the site. A series of fourteen test units (each one-metre square) was first excavated by hand. Eight of these units were sterile

FIGURE 4. Springbank Park Pedestrian Footbridge

FIGURE 5. Temporary Springbank Park Pedestrian Footbridge in foreground *circa* 1900

of cultural material, but the remaining six contained a total of 366 artifacts. An additional 108 artifacts were recovered from surface findspots, the subsoil interface and the back dirt. The ploughzone topsoil, approximate 40 centimetres thick, was then mechanically removed from an area measuring some 30 by 50 metres encompassing the prior surface artifact distribution area, plus a ten-metre wide surrounding buffer zone. The subsoil surface thus exposed was shovel-shined and revealed the existence of a dry-laid flagstone water well. This proved to be too deep and unsafe to excavate.

Three pre-contact Aboriginal artifacts (two utilized flakes and a uniface) were found, but these were not sufficiently diagnostic as to any particular time period or cultural affiliation. The vast majority of the artifacts recovered were domestic Euro-Canadian ceramic and glass tablewares. Of the 415 ceramic items recovered, 382 are kitchen/dinnerware sherds, 32 are architectural brick fragments and one is a smoking pipe bowl fragment featuring a human effigy. The kitchenware/dinnerware sherds have a good early representation of both creamware and pearlware, as well as early types of whiteware. The flat glass pieces are probably window glass and range in thickness from 0.8 to 2.7 millimetres. The date ranges of manufacture for the Euro-Canadian artifacts (excluding a single white granite anomaly) extend from 1770 to 1850. The majority of the artifacts however suggest a tighter date range of between 1795 to 1840. Based upon the type of artifacts in the assemblage and the historical background research, activities on this site are thought to have spanned a 40 to 50 year period.

UTILITIES, TRANSPORTATION AND INFRASTRUCTURE

Projects grouped under this heading included various Stages 1 to 3 investigations as well as continuous monitoring during construction activities. Infrastructure investigations can be arbitrarily defined as having to do with leisure activity facilities such as the development of golf courses, casinos, and the like. A second category involved the proposed construction of sewers and sewage works, force mains, hydro and water main corridors, roads, parking lots, bus bays, aggregate extraction, and underwater components. Some projects fall conveniently into a monitoring/capping category. A report of a major investigation in each of these categories is presented here.

LEISURE

The City of London has a continuing program of developing the walkways along the full length of both the north and south branches of the Thames River as it flows through the city. Often located on the riverbanks, this connected walkway system passes both pre-contact and Euro-Canadian sites. A number of archaeological surveys conducted at various times by MHCI involved the investigation of such diverse sites as pre-contact riverside camps, farmsteads such as the John Colville homestead site where the walkway leaves the riverbank, and London's only suspension bridge.

A Stages 1 and 2 assessment was conducted in the area immediately adjoining this bridge (Figure 4) and the area of the proposed parking lot addition. London's archaeological master plan described the whole area as exhibiting sufficient potential for finding archaeological resources to require a Stage 2 general survey. This was conducted using the standard test pit method at a five-metre interval. Despite the predicted potential richness of the area, and the relative nearness of registered sites, no archaeological resources were found at this location, and accordingly, no further assessment in this regard was recommended. The second part of this study (MHCI 1999d) involved a Stage 1 background research evaluation of the pedestrian suspension bridge located in London's Springbank Park. It was proposed that this footbridge be replaced at essentially the same location to continue the convenience of this river crossing and to make it accessible to those with ambulatory handicaps.

This assessment considered the reasons for the building of the bridge, its ancillary or collateral facilities, and the historical and technological accounts leading to the building of the bridge. The geographic area considered in this study was therefore extended somewhat beyond the bridge's immediate environs in order to place the bridge in the context of history and of the technological changes affecting it. This larger area includes the former Wonderland municipal campground and current Wonderland Gardens to the east, Springbank and its Pump House to the west, and from the brow of the embankment just to the south of the Thames River north to Riverside Drive (the north shore road) and the early community of Hopedale located there.

Bridges are built to provide for an easy crossing of a natural geographic or geologic barrier, and the Springbank footbridge provided just such a service. But it is also axiomatic, that a bridge has to have a demonstrated need to warrant its construction, i.e. it permits travel to be accomplished between two desirable or important points on land. The current Springbank Footbridge, as well as an earlier temporary structure, permitted travel across the Thames River from the river's south bank in Westminster Township to the rivers north bank in London Township, but it was a much more narrowly focused interest that caused it to be built and located where it is.

The early 20th century temporary bridge was a wooden trestle construction that was removed every autumn and replaced in the spring. Virtually nothing seemed to be known

about this bridge, or even if it had, in fact, existed. However, a published reference to this bridge was found in a lesser known work of local/technical interest (Buchanan, 1968). Its existence was also noted on an early topographical map and in a private account of a Normal School (Elementary Teacher's College) field trip to the area (Rose, 1912). A photograph of this bridge was located, rather surprisingly, for the bridge was quite incidental to the primary subject of the photograph (Figure 5).

The current pedestrian bridge at Springbank owes its existence to a number of major civic programs and technical developments adopted by the City of London, to the visions of civic-minded citizens, to the dedication of many elected officials, and to the efforts of municipal managers and employees. Included among these are the development of the municipal waterworks/reservoir system, the development of Springbank Park and the E.V. Buchanan Thames Valley Golf Course (Canada's first municipally owned golf course) and the introduction of streetcar service to Springbank Park.

These factors could be considered individually and in great detail, but are presented only briefly here, for this is a story of the bridge rather than of Springbank Park itself. In fact, they combined to make the construction of the bridge necessary.

The water supply from the wells serving the growing city needed to be augmented and land on the Thames River to the west of the city was acquired. Here, the springs provided water in ample quantities. A reservoir was constructed on the high hill to the south (Reservoir/Hungerford/Snake Hill) and a pump

FIGURE 6. Two circa 1879 Frame Structures on Jane Street may be impacted by the proposed widening of Teston Road.

house was erected on the riverbank below to pump the potable spring water to the reservoir. A dam, completed in 1879, was built on the river to provide power for the pumps.

This project was the beginning of the assembly of the land area now known as Springbank Park. By 1911, some 400 acres (approximately 162 hectares) of land had been acquired for the leisure and picnic activities of the townsfolk. A pipeline was laid to deliver the water to London, and its path was graded and graveled, becoming known as Pipe Line Road (Springbank Drive). The trip by road to Springbank required the use of a horse and buggy, for it was a little distance out of London and ordinary townsfolk did not have easy access to such transportation. Fortunately, they could travel by river steamer the 22 miles (4 kilometres) to the pavilion at Springbank from the forks of the Thames in downtown London and return for a $1.54 fare. Sadly, one such trip ended in disaster when the steamer Victoria capsized with great loss of life in 1881.

With the increasing use of Springbank Park as a picnic/leisure time destination, a convenient mode of transportation between the city and the park became necessary. In 1895, tracks were being laid for the London Street Railway Company's new Springbank Streetcar Line. It was this factor, in combination with one other, that led to the construction of the suspension bridge. This second factor was the acquisition of land on the north side of the river to permit easy servicing of the waterworks dam. Over time, additional lands were obtained and a municipal golf course was developed. Suddenly, there was a need for a facility to permit golfers living south of the river or arriving by streetcar to cross the river. The early system of propelling one's self across the river by a rudimentary boat and cable stretched across the river, while solving the problem, was not wholly satisfactory. This pedestrian bridge was the answer.

The study examined the many contextual factors surrounding the bridge in considerably more detail. These include not just the walkway which traverses the former street car line road bed, but also such features as Wonderland Gardens where a young Londoner, Guy Lombardo led his orchestra, the Civic Garden Complex with its public-access greenhouses and meeting rooms, and a wonderful public rose garden much loved by newly-weds as a setting for their wedding photos. In a curious twist of fate, the bridge that was constructed because few people had motor vehicles now terminates in the golf course's extensive paved automobile parking lot. But the bridge is used by many today including golfers still too young to acquire a driver's permit.

Transportation and Communication

Road and highway upgrading is an important part of MHCI's infrastructure investigations. The Greater Toronto Area (GTA) continues to expand and to include former villages once well beyond the municipal boundaries of old Toronto. One such village is Teston, located at Jane Street and Teston Road. In the northernmost segment of the archaeological investigation related to the widening of Jane Street (Y.R. 55) from Rutherford Road (Y.R. Road 73) to Teston Road, City of Vaughan, R.M. of York (MHCI, 1998a; Mayer and Hawkins, 2000), it was noted that the frontages of two frame structures extend into the new expanded right of way. Both of these structures (Figure 6) date from the late 19th century, possibly circa 1879. Little was known of these two structures to the extent that it was not immediately clear what their original functions were.

An investigation was necessary to determine their original use and their place within Teston's history. It was gleaned from a number of sources, including a member of the family who, in later years, owned the structures, that they were part of an early hotel complex (circa 1860 B 1870), consisting of a hotel, livery stable, carriage shed and a small barn. Only the

hotel and livery stable were assessed. The small barn still sits at the rear of the property and will not be impacted by the road widening. The large wood carriage shed, which was located opposite, on the west side of Jane Street, was demolished earlier.

This study considered the Teston community and the hotel complex in its early role as part of the transportation/communications system as it developed in Ontario to the time of the introduction of the motorcar and the province's improved road system. It is believed from anecdotal family information, that coincident with the increased reliability and consequent use of the motorcar during the 1920s, the hotel became a private family residence and was later made into a duplex.

Documentation was provided by means of: colour photographs, on-site inspection of the exterior facades; structural features that distinguish the buildings; Heritage Record Form Information; Heritage Consultation & Documentation Checklists; and a written description of the buildings and their relationship to each other and to the village. A modified form of the Ontario Management Board Secretariat's heritage evaluation process was used to establish the heritage ratings of these buildings on each of eight criteria. In each case, the rating score total lead to a determination that neither of these buildings is a heritage resource and is not considered to be of heritage significance by these standards.

The two 19th century frame structures are best viewed, not just in their historical context as part of the early community life in Teston, but also, as it happens, in the context of the community's commercial life, and, more particularly, within the context of the area's transportation development over the past one-and-a-half centuries. Teston is a rural community in the former Township of Vaughan. At its prime, it numbered about 100 inhabitants, but later declined to some 64 residents. With the encroaching housing developments extending northward from Maple, Teston might now be said to number considerably more, but to do so would obfuscate almost completely its history before the 21st century. It was described in 1882 as being a village in the township of Vaughan west riding, County York; distant from Richmond Hill, a station of the Northern Railway, 3 miles; from Toronto 21 miles (Lovell, 1882). Earlier known as Thanesville, it was renamed Teston shortly before Canada's Confederation when the village took on the name of the Post Office established on August 1, 1865. Mail was delivered to Teston thrice weekly. The post office remained open until 1926, about the time that rural mail delivery was introduced. The new address for Teston became Rural Route 1, Maple.

Social activities at Teston would have included church groups, Women's Institute meetings (although the Tweedsmuir histories seem to be silent with respect to Teston history), meetings of the Farmers Co-operative at the Grange Hall, meetings at the Sons of Temperance Hall, meetings and socials at the school, and of course, the usual social encounters at the store and post office. Holiday celebrations would no doubt have featured the Teston Citizens Band formed in 1879, for this band was sufficiently accomplished that it performed at the Canadian National Exhibition in Toronto.

In 1882, Teston had a number of commercial establishments and tradespeople (Lovell, 1882). Mrs. Joseph Lund and Mrs. J. Walker are shown as working at the general stores. The Lund family, operated one of these stores,(the other by George Wilson who served as Postmaster). Thomas Taggart was a butcher. As was the custom in many villages of the time, there were dressmakers to provide sewing and tailoring services. Miss R. Bates and Miss J. Kinner were Teston's dressmakers. Thomas Bates was the local shoemaker. James Hales, Hugh McOchron, and Thomas Phillips provided carpentry and builder services. Sam Walker

and Thomas Walker were stonemasons. Richard Lund was the blacksmith (Joseph Lund had served in this capacity earlier). Charles Ham, William Knight, and Richard Lund (the blacksmith) worked at the manufacture of wagons and carriages. One of these wagon shops was located on the upper floor of Lund's new smithy. There was also a Justice of the Peace, an inspector of weights and measures and a hotel operator, William Taggart.

But what Teston did not have in the way of facilities and services is also of importance. Teston did not have grand mansions, mills, large factories, a railway station, a telegraph office, major communication roads, or even a large hotel. But it did have a small hotel. And it is this small roadside hotel, inextricably entwined with the transportation system of the day as it influenced Teston, which was the focus of this study. All of the buildings referred to, as well as many others, still stand and are largely unmodified.

This complex of buildings was erected as a commercial transportation-related facility. It provided stabling for travelers' horses, and perhaps provided horse-drawn transportation services as well. Both the railways and the expanding Ontario highway system bypassed Teston. As small as it was, the hotel, which appears now to be somewhat more than twice its original size, was adequate to meet the needs of the small number of patrons requiring its services at any one time. It is obvious that it was never a residential hotel (where people lived on a continuing basis) such as might be found in a city. And because it never served directly the larger numbers of travelers as might arrive by train, there was never any need for it to increase significantly in size or in provision of services. It was, and remained, a small village hotel offering few, if any, luxuries to those who found themselves in need of overnight accommodation as they continued their journey by horse and buggy/wagon/sleigh. When the motorcar arrived and the roads improved the journey that once took days was reduced to a few hours, and overnight accommodation was no longer required. The hotel then became a private residence.

Because Teston has always been at some remove from Toronto and was not on a primary road, there was little, if any, pressure for the hotel to be reused except as a private residence. The old livery stable, rather fittingly perhaps, became the bus barn housing the autobus that carried local factory workers to the World War II aircraft assembly plant at nearby Malton. For those years, at least, it maintained its affiliation with transportation. In later years, it was relegated to garage sale and flea market activities, but even these are now in the past. It was not until the year 2000, approximately 130 to 140 years after their construction, that these hotel buildings became threatened by new housing developments. Today, new residences have been built on the site of the carriage shed across the road. And new housing now sits almost on the old hotel's rear doorstep.

The proposed widening of Jane Street as a major artery is bringing an end to the splendid isolation enjoyed by the hotel and its outbuildings for almost a century-and-a-half.

Burials

A number of archaeology investigations involving cemeteries or burial sites was conducted by MHCI, the most prominent being the multi-year series of investigations for the Blue Water Bridge Authority in Point Edward, Ontario. While crossing a bridge, one seldom thinks of the ancillary facilities needed for the operation of a billion dollar bridge such as the Blue Water Bridge, with its two (east and west) spans, and the many integral facilities necessary to its operation. These include customs and immigration facilities, tollbooths, business offices, maintenance facilities, truck inspection facilities and livestock/veterinary inspection facilities. Perhaps the facility best known by the non-commercial bridge user is the duty-free

shop. The investigation reported here recounts some of the activities conducted as part of the approval process for construction of a new duty free store.

This investigation contributes to the larger story of the many overlapping pre-contact occupations in this area as has been previously reported in some detail (MHCI 1993, 1995) including reports of the Baines site (AfHo-4) by MHCI (1998b, 1999e, 1999f, 2000) and by Mayer and Hawkins (2000). Bill Fox, then Regional Archaeologist with the Ontario Ministry of Citizenship, Culture and Recreation discovered this site in 1986. A subsequent investigation by MHCI on a different part of the site confirmed the identification that the archaeological material originates largely from the Late Middle Woodland period (circa A.D. 500 to 800). Because impacts from proposed construction could not be avoided, a Stage 4 mitigative excavation was conducted, employing a project manager, a field director, three crew supervisors, an osteologist, an organizational advisor, a graphic artist, and 33 field assistants (Figure 7), all adhering to a very demanding season-driven excavation schedule over a 13-month period.

In order for the excavations to be mapped as accurately as possible, the locations of all in-ground construction areas were clearly marked in the field by an Ontario Land Surveyor. A master survey grid with permanent datum reference points was established and incorporated into appropriately scaled engineering drawings. Both hard copies and electronic copies in AutoCAD and CorelDRAW were used during fieldwork. After the various modern fill layers (up to 100 centimetres thick) were mechanically removed to about 15 centimetres above the *in situ* cultural soils, the fieldwork consisted of the hand-excavation of units, each one-metre square, using shovels and trowels. The *in situ* cultural soils were screened through six millimetre wire mesh. Artifacts were washed and catalogued in the field on a daily basis. Three crews consisting of a supervisor and six assistants were assigned daily responsibilities for various parts of the construction area.

The field director and supervisors did documentation of artifact recovery rates, subsurface cultural features and soil stratigraphy in the field. Seven binders (four-inch size) contain the many thousands of standard record forms used to document the collected data. These data were also entered daily in the computers centered in a field office trailer.

Every excavated unit had at least one wall drawn and photographed. Many of the subsurface features required as many as six drawings of the planview and stratigraphy profiles. Using non-bleed ink pens, photograph captions were inscribed on the backs of the more than 3,000 colour photographs and then were entered into a spreadsheet database to provide for keyword searches by provenience and topic. In order to facilitate the tasks of administration, time keeping, and cost accounting, the fieldwork and report preparations were conducted with fewer than twelve internal corporate numbers because new construction related projects were added from time to time.

The New Duty Free Store project involved the hand-excavation of 2,308 units (each one-metre square) where foundation screw pilings and in-ground services would impact *in situ* archaeological resources. A total of 276,189 artifacts were recovered. Recovery rates per unit range from a low of zero to a high of about 1,000 (average rate was about 120). The four major Aboriginal artifact types are bone/antler fragments (26.8%), fire-cracked or fire-affected rock fragments (26.6%), chipping detritus (24%) and fragmentary pottery sherds (19.2%). Among the artifacts recovered are two pop-eye birdstone preforms (Figure 8) that probably originate from the Early Woodland period (circa 1000 to 0 B.C./A.D.).

Three projects involved the disinterment of a number of Aboriginal and Euro-Canadian burials. One burial was that of an unidentified

FIGURE 7. Duty Free Store Excavation Crew

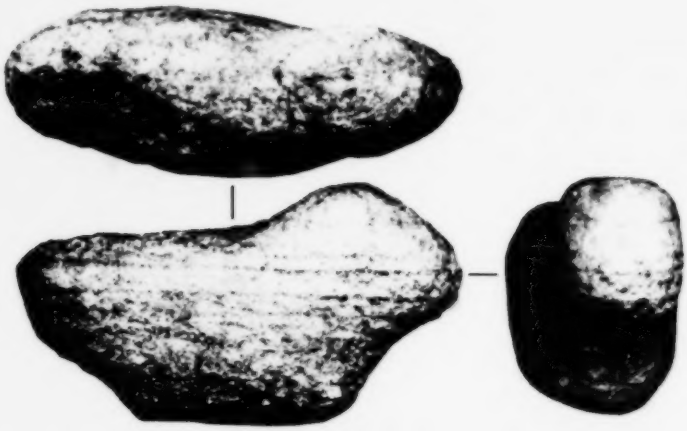
Euro-Canadian infant that the Cemeteries Branch of the Ontario Ministry of Consumer and Commercial Relations declared to be an irregular burial site. The remains were disinterred and reinterred in the children's section of a Sarnia cemetery. The committal service was conducted by a minister and attended by representatives of the Medical Officer of Health by officials from the Blue Water Bridge Authority and from MHCI.

A second infant burial was that of an Aboriginal newborn child at a location declared by the Cemeteries Branch to be an unapproved Aboriginal peoples cemetery and a site disposition agreement was approved by the Aamjiwnaang First Nation to allow the disinterment and immediate reinterment in a cemetery of Aamjiwnaang choosing. In similar fashion, the Aamjiwnaang First Nation reached agreements for the disinterment and immediate reinterment of other pre-Contact period Aboriginal adult burials. Prior to this happening, the Aamjiwnaang First Nation conducted ceremonies to which representatives of neighbouring First Nations peoples, and of the Blue Water Bridge Authority, the Ontario Provincial Police and MHCI were invited to participate fully. Both the invitation to participate and the full participation of the invitees demonstrate the remarkable mutual trust and respect for human dignity of all of the individuals and organizations involved.

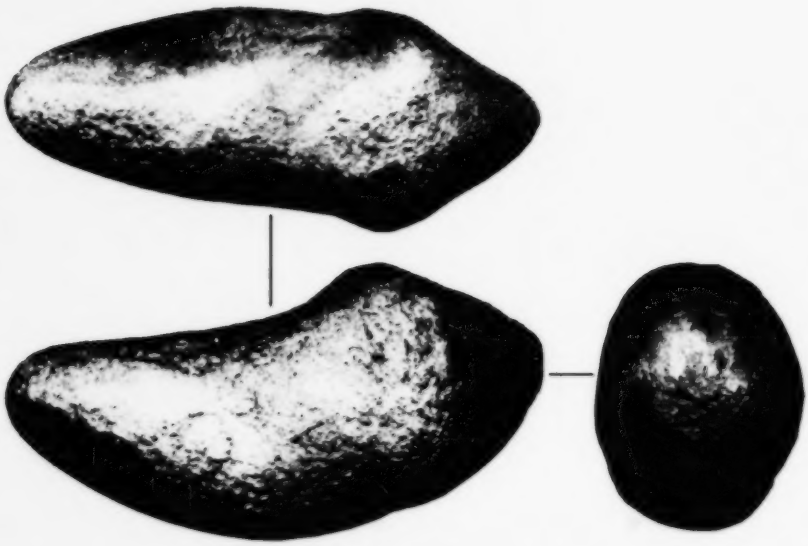
There is obviously much analysis still to be done on this site because of its archaeological significance, and especially because of its importance to the Aamjiwnaang First Nation. Based upon the diagnostic lithic and pottery artifacts, the site was regularly occupied for about 5,000 years from the Middle Archaic period (circa 3500 B.C.) to the Late Woodland period (circa A.D. 1500) and even later from Aamjiwnaang First Nation oral traditions. There is also an apparent localized spatial variation in occupation by time period that will need to be explored more fully.

Diagnostic artifacts from the Archaic period seemed concentrated in one area while Middle to Late Woodland artifacts were more likely to be concentrated in another.

The large amount of fire-cracked and heat-



"Pop-Eye" Birdstone Preform
Unit 634E-207N (#AfHo-4:10723)



Birdstone Preform
Unit 660E-206N (# AfHo-4:11654)

FIGURE 8. Birdstone Preforms

affected rock suggests that the main activity of the campsites involved the procurement and processing of food. Fishing-related tools (i.e., harpoons and net sinkers) along with an abundance of fish bone indicate that a wide variety of large-sized fish were harvested on a seasonal basis from Lake Huron and the St. Clair River (and are still harvested today for commercial and recreational purposes). Another reason for the area's popularity would appear to be its geographical location as the shortest and easiest place to cross the river using the swift current (and back current) for propulsion in both directions. Long-distance trading and travel over hundreds of kilometers using the Great Lakes water drainage as the original "NAFTA Superhighway" is quite evident from the significant amounts of chert types present from Ohio and Upper Michigan. Aamjiwnaang First Nation oral traditions relate that the Point Edward / Port Huron area was well known for thousands of years to Aboriginal peoples as a popular "meeting place" for trade and a social centre for other inter and intra tribal activities.

There remains still the enormous academic task of co-ordinating the whole story of the Lake Huron/St. Clair River area. Far beyond the parameters of these individual archaeology projects presented here, it will necessitate the combining of the archaeological findings in the Port Huron/Fort Gratiot area with those of the Point Edward/Sarnia area.

MONITORING

A number of MHCI's archaeological activities involved the monitoring of areas under construction. These included a bus bay on an existing bus route and the expansion of a number of small parking lots at public facilities. The monitoring task at the Point Edward Charity Casino involving the construction of a new and extensive parking lot being built to accommodate the anticipated international gaming clientele proved to be a particularly demanding project. The casino was being erected by the Ontario Lotteries Corporation on the east bank of the St. Clair River in Point Edward, several hundred metres downstream from the Blue Water Bridge. These lands were used as railway lands by the Grand Trunk Railway for a hundred years or more and later by the Canadian National Railway as its southwestern Ontario terminus and international freight transfer facility. The transportation story has been documented in an earlier archaeology report (MHCI 1993).

Once again, the story is more than that of the artifact discoveries, for the casino property is part of that large continuously occupied pre-contact area around the outlet of Lake Huron. As well, it is a story of Euro-Canadian land use and of evolving transportation technology. It is also a story not only of what was found during the investigation, but also of what was encountered. As it happened, construction was started without the benefit of an archaeological survey, so the standard assessment for most of the affected area, could not be conducted. However, the Ontario Casino Corporation was persuaded by the Aamjiwnaang First Nation to permit MHCI personnel to monitor construction excavation in order to determine if archaeological resources were present. Prior to construction, the scrub brush and small trees covering the eastern part of the parking lot had been mechanically cleared exposing surface soil. A Stage 2 pedestrian survey was attempted at a five-metre interval, but it was abandoned as soon as it was determined that only thick deposits of industrial fill were present. A Stage 2 shovel-test-pit survey was also attempted. After excavating six test pits (approximately 35 centimetres in diameter) to the subsurface water table, it was determined that most of the study area was covered in a layer of fill up to 1.5 metre thick consisting of waste material from the Holmes Foundry formerly located at Sarnia. The fill contained metal casings and moulds for automotive engine components mixed with construction debris, waste, sand

and soil. Barrels of waste oil were later found buried in one part of the study area. The organic soil beneath the fill was often very black and sometimes contained plant material from the bottom of the former Sarnia Bay. This organic soil was the same as that which had been found during construction activities a few hundred metres distant. Because of the thickness of the fill layer plus the high ground-water table, it was not reasonable or even possible to test excavate by hand to undisturbed subsoil.

However, the potential for finding archaeological resources within the casino property had been very well documented, allowing the monitoring to proceed with well-founded expectations. Because the monitoring did find substantial and significant Aboriginal archaeological resources, a Stage 4 mitigative excavation was conducted for the Aamjiwnaang First Nation and in consultation with the Ontario Ministry of Citizenship, Culture and Recreation on that part of the casino property where construction related impacts could not be avoided. This archaeological site was named EMJI-BEKAAJWAANG NBIISH (A Place of Slow Moving Waters) by the Graves Protection and Repatriation Committee of the Aamjiwnaang First Nation, and was registered into the provincial archaeological database as AfHo-11.

Other archaeological assessments in the immediate vicinity had found similar and probably related Aboriginal sites that form a virtually continuous series of overlapping occupations around the shoreline of the St. Clair River and the former Sarnia Bay (MHCI 1993, 1995).

The monitoring concerned the installation of a number of infrastructure facilities. With respect to the storm and sanitary sewer lines, whenever there was any indication of possible undisturbed stratigraphy under the fill, the excavator operator was instructed to separate each stratigraphic layer for sample screening. It thus became evident, and this was confirmed by examining old photos and shoreline drawings, that this area was land reclaimed from the former Sarnia Bay. Immediately east of the former CN railway freight/Canada Steamship Line terminal building, a series of concrete docks for the unloading of trains had been removed earlier. When these dock footings were removed, it was discovered that they were built upon cedar logs (60 centimetres in diameter) that extended down into fluvial sand. These logs were in remarkably good condition and were left in place, being below the depth of the pipes to be installed. Monitoring was also conducted in connection with the installation of buried water lines and hydro lines, as well as for the repair of a ruptured and pre-existing waterline located outside the study area.

The monitoring activities recovered a total of 215 artifacts including core fragments, net sinkers and utilized flakes. There were 41 faunal pieces and 139 pieces of chipping detritus. The Stage 3 investigation of the water main excavation required the hand excavation of sixteen test units. As soon as it became clear that this area warranted a Stage 4 mitigative excavation, it was decided to move the water main to a new area to be shared with natural gas and cable services. The first area was to remain unexcavated and would be capped above the cultural level and then built up to cover the services. Thus no impacts to the archaeological resources occurred.

With respect to the hydro, sanitary sewer, and storm sewer lines, nine test units were hand-excavated. Because all contained high quantities of pre-contact Aboriginal artifacts, a Stage 4 mitigative excavation was conducted. Artifact recovery rates varied from a low of zero to a high of 201. In total, 4,966 artifacts were recovered of which 4,377 are pieces of chipping detritus. Among the other artifacts are 151 faunal examples of wildlife species still to be found in the area. The various cores, retouched and utilized flakes, wedges, bifaces, scrapers, spokeshaves, projectile points, unifaces, knives,

drills, graver and fire cracked rock hammerstones and net sinkers are now entered into the master catalogue recording the many hundreds of thousands of artifacts recovered during the many studies of this Lake Huron/St. Clair River junction.

There are a few Aboriginal artifacts in the casino monitoring collection that are diagnostic of the time period when the site was occupied. The four Jack's Reef projectile points originate from the early Middle/Late Woodland transitional period (circa A.D. 700 to 1200). Within the pottery artifacts found there is a small sample of cord impressed body sherds that possibly date to the same period. It appears from the nature of the artifacts recovered that the activities conducted involved a mixture of fishing and lithic reduction. It is possible that the site is contemporaneous or associated with a nearby base camp like the Blue Water Bridge South site (AfHo-7) or the Forcemain site (AfHo-12). There was no subsurface evidence of structures and the pottery was limited to likely a single vessel. This would seem more likely an area where fish were harvested with processing done elsewhere. This would explain the small number of fish bones recovered from the site. An explanation for the relatively large amount of lithic debris and lithic artifacts involves the fishermen working on stone tools as they waited for the fish. Because part of the site had been previously impacted and part extends beyond the casino property, it is difficult to make any more detailed interpretations at this time.

Before the archaeological monitoring at the casino site could begin, each member of the field crew attended a site safety seminar to learn about the inherent significant safety risks likely to be encountered. Mandatory participation in project-manager site-safety programs such as this is increasingly becoming a requirement for archaeological monitoring at major construction sites where archaeology and construction activities are conducted simultaneously. Apart from the usual construction risks of working within deep excavations and trenches; work here involved the presence of contaminated soils.

The property had been used as railway lands built upon industrial fill placed in the former Sarnia Bay, so crews were warned to be aware of the possible presence of hydrocarbons and to stop hand excavation if the odor of such hydrocarbons was sensed or suspected. Meetings were held throughout the project to advise MHCI about the presence of various chemicals and materials present in the soil samples. The soil samples contained the presence of: petroleum hydrocarbons; volatile organic compounds; benzene; toluene; ethylbenzene; xylene; polychlorinated biphenyls; polycyclic aromatic hydrocarbons; inductively coupled argon plasma materials; pesticides and selected Ontario Regulation 347 Schedule 4 leachate parameters. Soil analyses indicated that the amounts were below Ministry of Environment guidelines.

The original soil testing survey determined that the contaminated soil did not extend into the archaeological site. However, two days later, MHCI was advised that because of errors in the engineering drawings, the archaeological site was heavily contaminated. The Aamjiwnaang First Nation and MHCI then required that the contractor accurately determine all of the significant safety and health issues arising from the contaminated soil, the extent of the contamination, as well as the level of risk the archaeological field crew faced as a result of the exposure to it. Further soil investigation was undertaken and when the resulting report with its more precise map was issued, hand excavation resumed. But the crew was protected by gloves, goggles, masks and disposable paper jump suits. To avoid unnecessary risk to field crewmembers, the placement of the planned waterline was moved to an area already excavated eliminating the need for hand excavation at this location.

The continuing concern about contamination was underlined by the receipt of information that some of the soil samples exceeded Ministry of Environment guidelines for soil remediation criteria for Total Petroleum Hydrocarbons (TPH), and further that Blood Sample Analysis for TPH is not a standard practice for laboratories in Ontario. MHCI continues to make all personnel aware of, not only the evident construction risks in archaeology, but also the need for awareness of contaminated soil risks. Among other suggestions indicated in a recent publication *Dangerous Places: Health, Safety, and Archaeology* (Poirier and Feder 2001), crewmembers are now strongly encouraged to wash their hands not only before eating but also before using the toilet.

MENTOR AND PUBLIC/PROFESSIONAL SUPPORT

MHCI continued to support a number of endeavors associated with archaeology and heritage. Grants were made in support of the publication of two books in the industrial heritage field and in the archaeology/environmental field. In addition to the ongoing employment of students in archaeology and anthropology, part-time employment on a project basis was provided for a number of students (secondary school to graduate studies) when the interests of these students could be accommodated within the MHCI project calendar. These projects were designed not only to be demanding of the students, but also to permit them to utilize the full range of their capabilities in a professional/commercial cultural resource management setting, as well as to extend and develop their range of skills applicable to archaeology settings. Contributions were made to professional journals in the form of articles and commentary, to books in the form of chapters written and editorial assistance. MHCI also participated in public education activities through the provision of media commentary when requested and in the provision of background information for journalists and columnists preparing articles of local archaeological/heritage interest.

REFERENCES

Buchanan, E.V.
1968. *The Story of London's Water Supply, A History.* The London Public Utilities Commission, London.

Crinklaw, Raymond K, Olga B. Bishop and George P. Rickard.
1986. *North Talbot Road WestminsterTownship.* Crinklaw Press, Lambeth.

Lovell, John & Son
1882. *Lovell's Business and Professional Directory of the Province of Ontario for 1882, Alphabetically Arranged as to Places, Names, Business and Profession, with a Classified Business Directory of the City of Montreal.* John Lovell & Son, Montreal.

Mayer, Robert G. and J. Trevor Hawkins
2000. "Mayer Heritage Consultants Inc. Continuing Study Series: A Look at Mitigation and Heritage Investigations Conjoined by Purpose or Project." In *Annual Archaeological Report Ontario Volume 10 (New Series) 1999.* pp.15 - 26

Mayer Heritage Consultants Inc.
1993. Archaeological Resource Assessment, Blue Water

Bridge Additional Capacity Project, Point Edward, Ontario to Port Huron, Michigan." On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1995. Archaeological Mitigative Excavation (Stage 4), Blue Water Bridge South Site (AfHo-7), Village of Point Edward, Lambton County, Ontario,(revised December 1996). On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1997. Archaeological Assessment (Stages 1 and 2), Beaver Valley Subdivisions (26T-96006 and 26T-97018), City of Niagara Falls, R.M. of Niagara, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1998a. Archaeological Assessment (Stages 1 and 2), Proposed Widening of Jane Street (Y.R. 55), From Rutherford Road (Y.R. 73) to Teston Road, City of Vaughan, Regional Municipality of York, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1998b. Archaeological Mitigative Excavation (Stage 4), Baines Site (AfHo-4), Blue Water Bridge Parking Lot, Village of Point Edward, Lambton County, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999a. Archaeological Assessment (Stages 1 and 2), Oliver Proposed Draft Plan of Subdivision, City of London, Middlesex County, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999b. Archaeological Mitigative Excavation (Stage 4), Beaver Valley Subdivision (26T-97018), City of Niagara Falls, R.M. of Niagara, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999c. Archaeological Assessment (Stage 3), Beaver Valley Subdivision (26T-97018), City of Niagara Falls, R.M. of Niagara, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999d. Archaeological Assessment (Stages 1 and 2), Springbank Park Footbridge Replacement, City of London, Middlesex County, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999e. Archaeological Monitoring, Capping of Utility Services and House Demolitions / Removals, Blue Water Bridge Authority on St. Clair Street,

Village of Point Edward. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

1999f. A Disinterment and Analysis of Human Skeletal Remains, Blue Water Bridge Burial (AfHo-3) & Baines Sites (AfHo-4), Village of Point Edward, Lambton County, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, Toronto.

2000. Executive Summary: Archaeological Assessment (Stage 4), Blue Water Bridge Authority Duty Free Store, Village of Point Edward, Lambton County, Ontario. On file, Ontario Ministry of Tourism, Culture and Recreation, London.

Page, H.R. & Co.
1878. *Illustrated Historical Atlas of the County of Middlesex, Ontario.* Reprint Edition, 1972, Ed Phelps, Sarnia.

Poirier, David A. and Kenneth L. Feder
2001. *Dangerous Places: Health, Safety, and Archaeology.* Bergin & Garvey, Westport.

Rose, Christena
1912. "The Trip to the Peat Bog." Original Manuscript. Also In, *Nature L.N.S.* [London Normal School]. Reprinted 1992 in William W. Judd, *More Naturalists and Their Work in Southern Ontario.* Hearn/Kelly Printing Company Limited, London.

NORTHEASTERN ARCHAEOLOGICAL ASSOCIATES

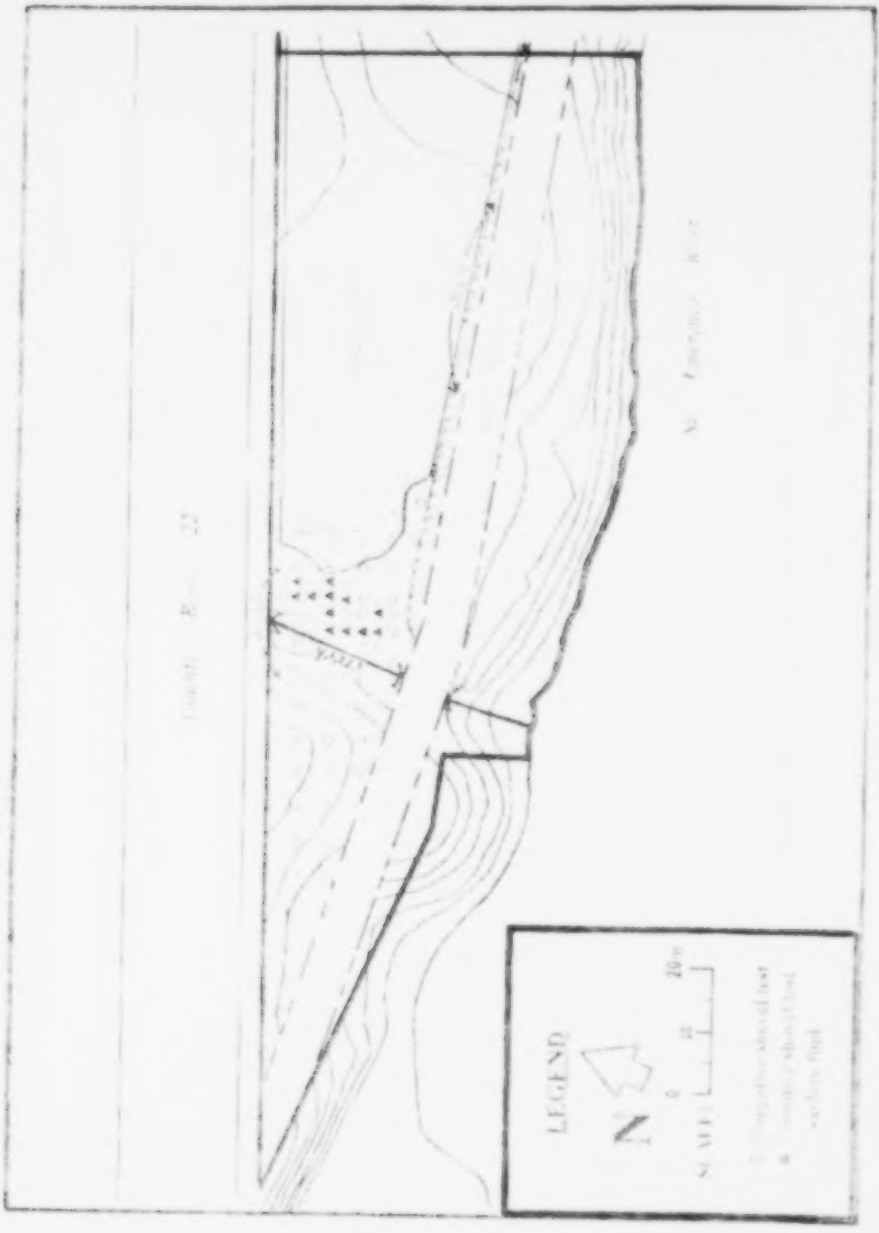
LAWRENCE JACKSON AND DONNA MORRISON

THE BESEAU SITE (BEGD-24)

Beseau is a small, seasonal, late Middle Woodland camp on Howe Island adjacent to St. Lawrence Islands National Park. The site area had been severely damaged by prior county road construction – effectively destroying its north and south ends (see Figure1). Research in 1999 identified several intact subsoil hearths containing abundant fauna, lithics, and ceramics. A single radiocarbon date of 1206 +-50 B.P. (BGS-2192) was obtained on a 10.2 gram wood charcoal sample from the 5 to 10 centimetre level of hearth Feature 2. Feature 2 contained 2,822 items including 2 decorated rim sherds, 74 decorated sherds, 158 plain body sherds, 12 biface thinning flakes, 9 flakes (including pressure flakes), 1 groundstone tool fragment, 1 modified flake, 1 utilized flake, 36 flake fragments, 740 mammal bone fragments, 7 bird bones, 1,750 fish bones, and 31 clam shell fragments. The mammal bone included 427 split longbone fragments, 74 identifiable elements – principally white-tailed deer and domestic dog, 232 calcined bone fragments, and 7 mammal teeth (principally domestic dog). The fish bones included 670 cranial elements, spines and ribs, 482 vertebrae and 598 scales. Identified fish species were brown bullhead catfish and yellow perch. Small fish from the nearby creek are also indicated. Finally, 20.45 grams of wood charcoal and one charred hawthorn seed were found in the feature. The Feature 2 radiocarbon date places this part of the site late in the Middle Woodland period. Calibration intercepts at one sigma are A.D. 724 and 891. Calibration intercepts at two sigma are A.D. 686 and 976. This age appears to be in agreement with the recovery of sherds decorated by cord-wrapped sticks from the 5 to 10 centimetre feature level where the charcoal for radiocarbon was obtained. A single worked bone fragment from Feature 2 may also relate to bone harpoon or leister tips found in several locations on the site (see Plate 1). The bulk of site material may be consistent with a late Middle Woodland identification.

The Beseau site ceramics are mostly undecorated, but available rims and body sherds show a predominance of Middle Woodland decorative attributes such as cord-wrapped stick and dentate stamp. Cord-wrapped stick is a relatively late innovation in the Middle Woodland, as seen at the Healey Falls site on the Trent River (Farvacque and Ross 1999). Feature 2 is dated to the Late Middle Woodland and contained cord-wrapped stick sherds. There are also St. Lawrence Iroquois ceramics (circa 1550

P.O.Box 493
Port Hope, ON
L1A 3Z4


LEGEND
N
20m

A.D.) at the site and a late period triangular chert projectile point. This strongly suggests repeated occupation of a seasonal camp from the Middle to Late Woodland periods (Jackson and Morrison 2000). There are no European contact period artifacts known at the site. Research at Beseau is continuing in 2001.

THE MORROW SITE (BAGI-29): A PICKERING-STAGE BURIAL SITE ON THE BAY OF QUINTE.

INTRODUCTION

In December of 1999, inarticulated human remains were discovered in Ameliasburg Township, Prince Edward County, during the course of a Stage 3 archaeological assessment (Morrison and Jackson 2000). This site is located on a relatively steep lakeshore drop-off, only 20 metres from a marshy embayment of the Bay of Quinte. The human remains were very fragmentary (on average, no larger that a $2 coin) but are presumed to be native since they were found in association with ceramics dating to roughly A.D. 1200. Furthermore, the area has high archaeological potential, with 10 sites registered within a 2 kilometre radius, including an Iroquoian village site (BaGi-26), excavated by Adams Heritage Consultants in 1998, which is located about 1 kilometre to the east. Once Morrison's identification of the human remains was confirmed by Dr. Hermann Helmuth of Trent University, the Tyendinaga First Nation was contacted and, in compliance with their wishes, all work was stopped.

A number of curious and unusual aspects of this site are worth noting. First of all, within the 7 metres squared main excavation area there were 335 items recovered, the majority of which were domestic cat, wild turkey, catfish, bass, and perch. None of these remains showed signs of being burned or calcined. Perhaps they had been introduced by wild animals, as there were some indications in the disturbed soil horizons that an animal burrow (e.g. fox den) had been present at one time. This might also explain the unusual and highly disturbed context of the human remains. For example, some of the fragments were located on 12 centimetres below ground surface and some conjoinable pieces were found 2 metres apart; in addition, some of the longbone ends showed evidence of possible scavenging by carnivores. The human remains were also intermixed at all levels with fragmentary ceramics, including decorated rim and body sherds, and soapstone bowl fragments (see Plate 1); no lithic artifacts were recovered.

ANALYSIS OF THE HUMAN OSTEOLOGICAL REMAINS

Human remains were found in all 7 main excavation units, and in one outlier 5 metres to the north (see Figure 1). In total, 73 human bone fragments were recovered (see Table 1). Many were elements from the skull, especially from the cranial roof and the occipital region, although no teeth were recovered. Fragments of several vertebrae were present, but these were very poorly preserved due to the spongy nature of these elements, which tend to crumble as they deteriorate. Fourteen rib fragments, mainly midshafts, were also present. In terms of upper limb elements, the distal end of a left humerus and the proximal end of the left radius were identified; these bones had previously been broken or splintered into several pieces that were later found to join together. The proximal and medial phalanges of a 5th digit ("baby finger"), as well as a piece of a clavicle, were also found. In terms of the lower limbs, there was a right fibula midshaft joined from 7 separate pieces, the proximal end of a right tibia shaft (broken into 4 pieces), a portion of the posterior side of the femur shaft, and 8 unidentifiable longbone fragments (mainly small splinters).

The only non-adult fragment was the proximal end of the left ulna of a child approxi-

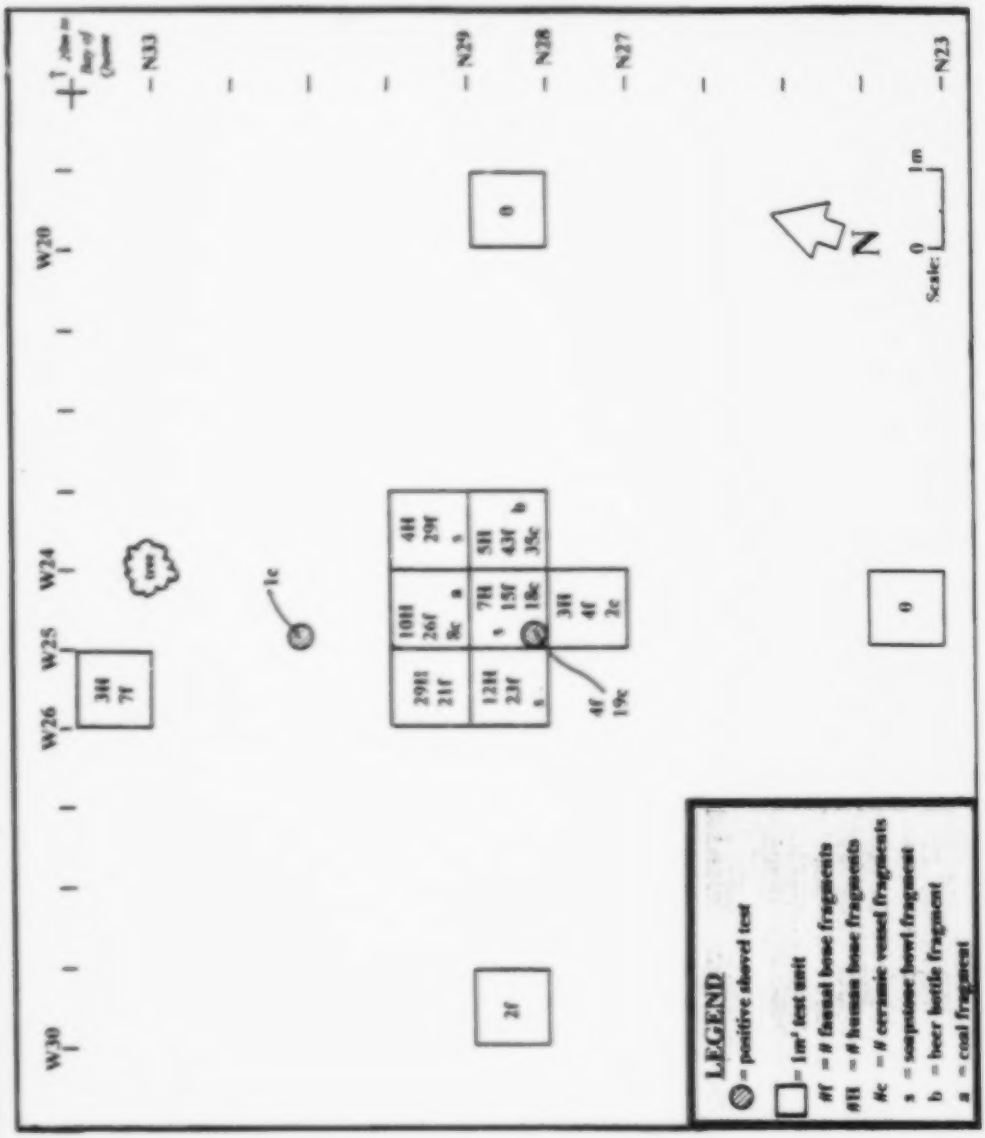


FIGURE 2. Test unit locations and counts/unit of artifacts and osteological remains.

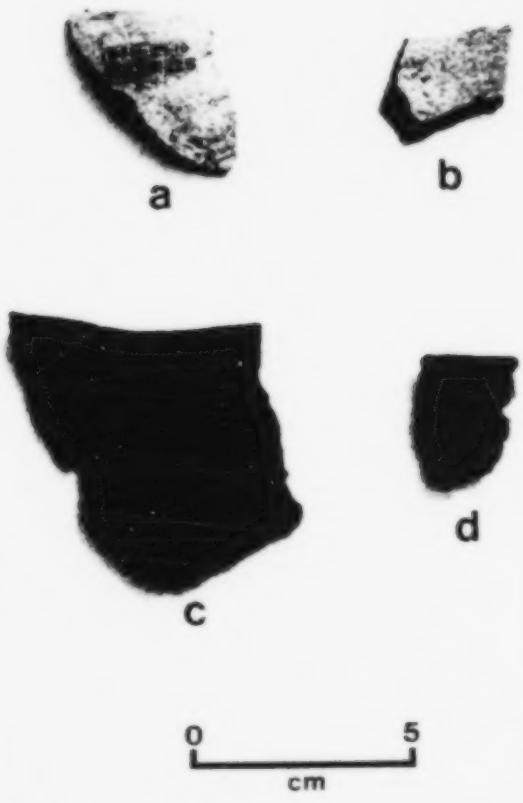


FIGURE 3. a + b: Soapstone bowl fragments; c + d: Decorated rim sherd from Pickering-age vessel (1200 A.D.)

mately two years old.

As mentioned above, the human remains were generally well preserved but very fragmentary; even the largest and heaviest bones in the body (e.g. femur, tibia, and humerus) had been broken and shattered, with jagged fractures. This type of damage would not have occurred naturally during the normal process of decay. One possible explanation is breakage caused by animals, who tend to chew the spongier *ends* of longbones while scavenging. As noted, there are several examples of this type of breakage in the assemblage such as the damaged ends of the humerus, tibia, fibula, and femur. However, it is possible that such damage could have been caused by some other agent.

Even though the 73 osteological elements were identifiable, all were small fragments, averaging 2-3 centimetres squared in size, and together would only make up about 10% of a single, complete skeleton. Together with the fact that the assemblage is incomplete (since work was stopped before the whole area was excavated) and the site context was completely disturbed, it was impossible to determine the cause of death, or the age, sex, stature, and health of the individuals present. It was also impossible to tell exactly how many individuals were, in fact, buried at the site. However, based on the identifiable remains, it is believed that the remains are from a single, relatively large, 20 to 30-year-old individual, and that the one juvenile element is from a 2-year-old child. Since there is only one bone fragment from this child, it is impossible to tell its exact age or the cause of its death. There is also no way of knowing if the child was buried at the same time as the adult(s) also interred at this site, or whether it was a separate burial event.

SUMMARY AND SITE INTERPRETATION

With a total site assemblage of 335 items (86 prehistoric artefacts, 174 faunal elements, 2 intrusive modern items, and 73 fragmentary human osteological elements) from eight 1 metre squared test units that include the origi-

TABLE 1:
SUMMARY OF HUMAN OSTEOLOGICAL ANALYSIS

Osteological Element	Total # Found	Test Units Found In
Adult:		
Cranial Roof Fragments	15	N27W25, N28W24, N28W25,N29W26, N29W24, N29W25,N29W26
Parietal Fragments	2	N28W25, N29W26
Temporal Fragments	1	N28W24
Occipital Fragments	4	N28W24, N28W26, N29W25,N29W26
2nd Cervical Vertebra (axis)	1	N33W26
Lumbar Vertebra Fragment	1	N29W26
Vertebral Fragments	10	N28W26, N29W25, N29W26
Rib Midshaft Fragments	12	N28W25, N28W26, N29W24, N29W25, N29W26, N33W26
Humerus (Left) - incomplete	1	N29W26
Radius (Right) Framgments	3	N28W26, N29W26
Phalanx – Proximal 5th	1	N28W26
Phalanx – Medial 5th	1	N29W26
Clavicular Fragment	1	N29W26
Femur Midshaft Fragment	1	N29W25
Tibia (Right) Shaft Fragments	4	N28W24, N29W24, N29W25, N29W26
Fibula (Right) Midshaft	1	N29W26
Fibula Midshaft Fragment	1	N28W26
Longbone Shaft Fragments	9	N27W25, N28W24, N28W26, N29W25, N29W26
Child (~2 years old):		
Ulna (Left) – proximal fragment	1	N28W25

nal two positive shovel tests, there appears to be significant site activity localized in a relatively small area of perhaps 4 by 8 metres. There were no *in situ*, or undisturbed, human burials and it is not yet possible to determine how the remains were buried, whether the fauna were intentionally associated with the human remains, or how the artifacts relate to the human remains.

There is also the possibility of redisposition over the hillbank of human remains, artifacts, and fauna by prehistoric peoples, as in the case of a slope midden. Or perhaps individuals farming the land in the 19th and 20th centuries redeposited these items, as was the case on the adjacent lot where at least one instance of artifact redisposition was noted in 1998; an isolated human burial and other artifacts found elsewhere in the course of farming activity might have been unceremoniously removed to this location.

The preliminary interpretation of this assemblage is that the buried remains of one or more human adults and a two-year-old child, likely with associated ceramic and soapstone vessels, were severely disturbed by animals or were redeposited at this site. There is also the possibility that the Stage 3 excavations touched on the edge of a tightly defined mass burial or ossuary that had been previously disturbed. Based on the estimated age of the ceramic fragments, it is possible that the burials date to the Pickering stage of the Late Woodland period, around A.D. 1200.

While a possible interpretation of the artifacts and osteological remains has been provided, the available evidence does not provide clear answers to any of the questions raised here. Only additional excavation would have clearly identified the nature of the interments and associated artifacts and fauna. However, since our priority was to honour the wishes of the Tyendinaga First Nation, there will be no additional work carried out at this site. The area will now be fenced and protected as an Unapproved Aboriginal Peoples Cemetery and a reburial of the human remains and associated findings is scheduled to take place in 2001.

ACKNOWLEDGEMENTS

We would like to thank Chief Donald Maracle and Lisa Maracle of the Tyendinaga First Nation for their participation in this process. The work of Dr. Hermann Helmuth is also greatly appreciated. Finally, we would like to thank Rob Morrow for his patience and understanding in this matter.

REFERENCES

Farvacque, Remi N. R. and Brian D. Ross
1999. From Portage to Dam: the Healey Falls Site, Trent-Severn Waterway National Historic Site (45H). Ontario Service Centre, Parks Canada, Cornwall.

Jackson, Lawrence and Donna Morrison
2000. Stage 1 to 3 Archaeological Assessment of Beseau-Vollebekk Subdivision, Township of Howe Island, County of Frontenac. Northeastern Archaeological Associates Report # 023-007.

Morrison, Donna and Lawrence Jackson
2000. Stage 1 to 3 Archaeological Assessment of the Morrow Site (BaGi-29), Ameliasburg Township, Prince Edward County. Northeastern Archaeological Associates Report # 023-008.

SUMMARY OF 1999 RESEARCH BY ARCHAEOLOGICAL SERVICES INC.

EVA M. MACDONALD, ROBERT I. MACDONALD, HEIDI RITSCHER, DAVID R. ROBERTSON, AND RONALD F. WILLIAMSON

Archaeological Services Inc. (ASI), operated under the overall direction of Ron Williamson, conducted 207 archaeological assessments throughout Ontario during 1999. The newly-established ASI Built Heritage, Cultural Landscape and Planning Section, which complements the core archaeological consulting services of the firm, also conducted numerous heritage and planning studies. The 1999 archaeological field work resulted in the registration or re-examination of 123 sites. Further investigations were conducted on several of these, as well as on sites discovered in previous field seasons. Six of the projects undertaken by the firm are discussed in further detail below.

THE PEACE BRIDGE SITE (AfGr-9)

In preparation for the construction of a companion span for the existing Peace Bridge in Fort Erie, archaeological investigations were continued within portions of the 30 hectare (74 acre) Peace Bridge site located in the urban core of the town (Williamson and MacDonald [ed.] 1997; Williamson and MacDonald 1998). Work this year, completed under the project direction of Ron Williamson and field direction of Shaun Austin and Bruce Welsh, continued the archaeological investigation of areas that will be disturbed to a depth greater than 20 centimetres during the construction of a companion span for the bridge. Areas that are to be impacted by servicing for a new Commercial Vehicle Processing Centre and by the re-configuration of Central Avenue and the Peace Bridge Plaza were also investigated.

The area which will eventually form the entrance onto the new twin-span bridge (Williamson et al. 1999:41-42, Figure 1) continued to be a focus of the project. Although the excavation of approximately 1,500 one metre units within this general area over the past two years has resulted in the documentation of two distinct paleosols containing large quantities of Late Archaic to Late Woodland artifacts (Williamson et al. 1999:41), comparatively few features have been found. An interesting discovery, however, was a 15-metre long portion of an Iroquoian longhouse (Figure 1). The house structure contained numerous features and posts clustered around two central hearths. Based on the recovery of a number of Early Iroquoian ceramic vessels from both interior and exterior house features, the structure can be provisionally assigned to the thirteenth century. Early Woodland ceramics were also recovered from nearby units.

528 Bathurst St.
Toronto, ON M5S 2P9

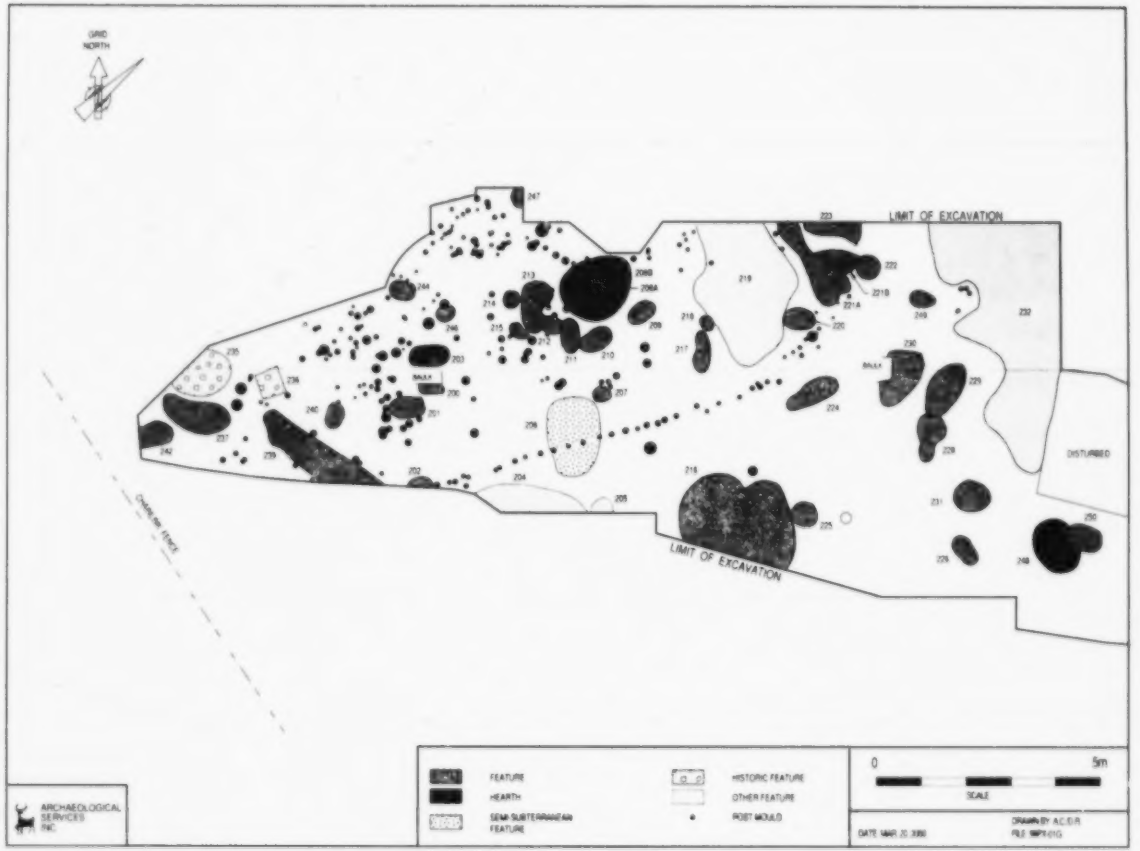


FIGURE 1. A portion of an Early Iroquoian longhouse found in the Niagara Parks Commission compound at the Peace Bridge site (AfGr-9), Fort Erie, Ontario.

Lands for a number of other service facilities were investigated as well. These include a permanent storm water management facility measuring approximately 25 metres in length and 15 metres in width, as well as ten sanitary sewer lines that feed into the tank, seven trenches for electrical conduits and two light standards. Approximately half of the areas examined were found to have been disturbed while the balance contained the remnants of a few features and some intact paleosol. The diagnostic artifacts from the paleosol layers and features in these areas were almost exclusively Late Archaic Genesee in origin, although Transitional Woodland artifacts were also recovered.

In addition to the new storm water management facility and the various utility trenches that were excavated, the truck lanes immediately to the northeast were also investigated since they were being re-surfaced. In this area, the thick asphalt and granular layers were removed using a large backhoe and any underlying intact paleosol was excavated in one metre units. The majority of diagnostic material from the 95 cultural features documented in the area can be attributed to the Genesee period, although several small fragments of Late Woodland ceramics were also recovered from one pit.

THE JARRETT-LAHMER SITE (ALGV-18)

The Jarrett-Lahmer site is a large Late Ontario Iroquoian period (*ca.* A.D. 1500-1550) village situated on a long, narrow promontory between two tributaries of the West Don River, in the City of Vaughan, just north of Toronto. It was known to both Roland Orr, who visited it in 1911, and again in 1918, and to A.J. Clarke, who produced a detailed sketch map of the village in 1924. More recently, Dana Poulton carried out Stage 2 and 3 investigations at the site (Mayer, Pihl, Poulton & Associates Inc. 1989; D.R. Poulton and Associates Inc. 1996).

In 1999, construction activities in the valley lands adjacent to the site required the completion of comprehensive salvage excavations of its western and southern margins. The investigations, conducted under the project direction of Martin Cooper and the field direction of David Robertson, included the mechanical removal of disturbed overburden to record settlement patterns over an area of approximately 4,250 square metres along the promontory's slopes and into the valley. The removal of the overburden revealed a multiple-row palisade located approximately half way down the slope. The full extent of the defences could not be established since past erosional processes along the southern flanks of the promontory appear to have been extreme. This same downslope movement of soil from the tableland and upper slopes, however, served to cap and protect both a downslope midden and an extensive horizon of highly organic wetland soils that also incorporated large quantities of cultural refuse. In places, this erosional deposit measured over one metre in depth. Efforts are currently underway to determine the causes and timing of this massive erosion–at least some of which appears, on the basis of the stratigraphic evidence, to be contemporary with the occupation of the village–and to reconstruct the original topography of the promontory and the creek valleys. The possible role of flooding in the creation of the soil profiles in this area is also a subject of analysis.

A total of 228 one metre square units were hand-excavated within the combined midden and wetland deposits on the southwest side of the site, resulting in the recovery of approximately 7,200 artifacts. An additional 800 artifacts were recovered from four exceedingly deep test units excavated at the base of the southeastern flanks of the promontory.

As is typical of Late Iroquoian sites, the assemblage is dominated by ceramic vessel sherds although significant quantities of lithics, ceramic smoking pipe fragments, and faunal remains were recovered as well. Many of the ceramic vessel rims recovered are those that are

generally considered to be "exotic" to south central Ontario, in that they are reminiscent of St. Lawrence Iroquoian types, but are likely to have been manufactured locally. As research in the Toronto region continues, however, it has become apparent that such diversity in ceramics should be considered a general feature of the Late Iroquoian ceramic assemblages of the area, although the underlying reasons for such cosmopolitanism remain to be fully explored.

THE MOUNT ALBION WEST SITE (AHGW-131)

Since 1996, ASI has been retained by the Regional Transportation Department of the Regional Municipality of Hamilton-Wentworth to assess and mitigate the impact of the proposed Red Hill Creek Expressway on archaeological sites located within the broad, pre-glacial creek valley, which extends from the tableland above the Niagara Escarpment, to the southwest end of the Lake Ontario floodplain (Andreae et al. 1998; Pihl et al. 1997; Williamson et al. 1999).

More than 100 archaeological sites, dating from the Early Archaic period to the 19th century have been found in the Red Hill Creek watershed. Ideally situated in terms of available resources, many of these sites were consequently re-occupied on many occasions. Intensive re-survey of the expressway corridor in 1996 resulted in the discovery of a large, new site on the edge of the escarpment that yielded Lockport and Onondaga chert lithic debris and was registered as the Mount Albion West site. Once the site was ploughed, the recovery of a Nettling point on the periphery of the scatter suggested an Early Archaic affiliation. In 1998, however, during the initial stages of subsequent test excavations at the site, a basal portion of a fluted point was recovered. This point, manufactured on Onondaga chert, was identified by Peter Storck as the base of an Early Paleo-Indian Gainey projectile point, dating to approximately 11,000 years B.P. Since the discovery of this point, continued work at the site, carried out under the project direction of Ron Williamson and Peter Storck and the field direction of Heidi Ritscher and Chris Watts, has revealed that the site was occupied primarily by Early Paleo-Indian peoples who were using Fossil Hill and Onondaga cherts, as well as Lockport chert, which outcrops near the site.

The effort to delineate the site has involved repeated pedestrian survey, as well as the excavation of both one-metre squares and shovel test units to evaluate plough zone artifact densities. Surface collection resulted in the recovery of 79 objects, including one scraper and while the site has not yet been fully delineated, it is already 6,000 square metres in extent. The core area, which appears to have been the largest of several activity zones and is represented by the main concentration of surface artifacts, is being excavated in one metre square units. All testing and block excavation has employed 1/8" screen and all units have been excavated to a depth of 30 centimetres to subsoil, which is immediately underlain by bedrock. Units in this area have produced high flake counts and many Early Paleo-Indian tools, including the Gainey point fragment and a unique Onondaga chert double-ended fluted biface, which is a wedge. Other Paleo-Indian material, presumably associated with the Gainey occupation, included channel flakes from the manufacture of fluted points, single and multiple spurred gravers made on flakes, beaked scrapers, and spurred end scrapers. A miniature point was also recovered. While specimens from other sites have been created on channel flakes, this example was crafted on a small bifacial thinning flake using careful retouch to produce the form of the point and the appearance of fluting. The only artifacts that are attributable to later time periods are the fragment of an Early Archaic Nettling-type point found peripheral to the main activity area and a Late Archaic Lamoka point, found on the edge of the block excavation area.

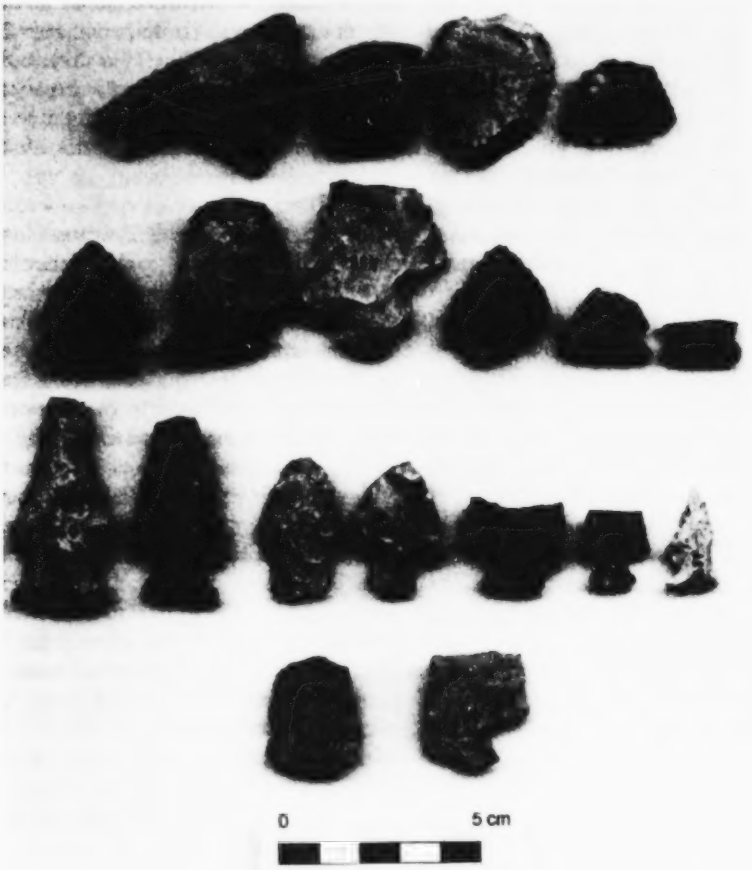


FIGURE 2. Selected diagnostic tools, spanning the Paleo-Indian to Early Woodland periods, recovered from Selkirk Cove.

It is probable that the culturally non-diagnostic tools and debitage of Fossil Hill chert are also part of the Early Paleo-Indian component, since this material appears to have been used only by Early Paleo-Indian peoples in extreme southern and southwestern Ontario. Similarly, the non-diagnostic material of Onondaga chert, used for the Gainey point and other diagnostic Paleo-Indian artifacts, may also form part of the Early Paleo-Indian assemblage, although this material was used by later peoples, as attested to by the Early Archaic Nettling and Late Archaic Lamoka points. The presence of channel flakes made from Lockport chert and the absence of Lockport tools diagnostic to any later period suggest an Early Paleo-Indian affiliation for Lockport material as well.

The composition of the tool assemblage suggests that a range of activities was carried out at

the site. Numerous scrapers including three beaked, two denticulates, six endscrapers, and 46 generic scrapers, as well as 28 worked flakes (of which 16 were Lockport chert and exhibit steep edge retouch) suggest on-site hide-processing. Moreover, the recovery of seven gravers and four spurred endscrapers suggest activities involving incising, boring, or drilling, perhaps during hide-working. The presence of seven utilized flakes with evidence of consistent edge damage and/or gloss (four of Lockport chert) suggest cutting and slicing activities. Eight projectile points or point fragments, on the other hand, suggest evidence of hunting and/or the refurbishing of spear tips, while the substantial presence of bifaces, ten of Onondaga and eight of Lockport, as well as one Onondaga preform, suggest the manufacture of point blanks for future use. Two spokeshaves, one of Fossil Hill and one of Lockport, indicate shaft straightening, while two Onondaga chert wedges suggest wood-working activities.

The debitage assemblage includes a large amount of undifferentiated shatter, a few core fragments and interior flakes from core reduction, bifacial thinning flakes from early and late stages of preform development, and unifacial retouch flakes, probably from scrapers. Projectile point fluting is represented by channel flakes. Many of these activities are represented by both the local Lockport chert and non-local Onondaga and Fossil Hill cherts, although core reduction is represented by Lockport chert alone.

Mount Albion West is the first Gainey site to be discovered directly on a source of toolstone, and perhaps falls near the edge of the range of use of the more preferred Fossil Hill chert. The site may, therefore, reveal much about Gainey strategies for tool replacement in the context of land-use. In this instance, at a strategic location on the brow of the Niagara Escarpment – the border between the broad rolling terrain of southwestern Ontario and the lowlands of the Ontario basin to the east – the two areas may have offered quite different subsistence potentials. The ongoing analysis of the site is being carried out by a diverse team of specialists, including Peter Storck, John Tomenchuk, Andrew Stewart, Peter von Bitter, Jack Holland, and Stephen Monckton.

SELKIRK COVE

In the Spring of 1999, Detritus Consulting completed a Stage 1 and 2 archaeological assessment of a proposed development located to the immediate west of Selkirk Provincial Park in the City of Nanticoke. Thirty-two archaeological sites were registered as a result of this work, and an additional 14 findspots of four artifacts or less were documented. Two of the findspots comprised isolated historic artifacts and one of the registered sites was the remains of a nineteenth century farmstead. The remaining registered sites were described as precontact lithic scatters ranging in size from 15 to 168 square metres. A total of 756 artifacts was recovered from these scatters, including Middle Archaic, Early Woodland Meadowood, and Late Woodland tools.

ASI was retained to carry out Stage 3 testing of the Selkirk Cove sites in the late Summer of 1999. This work was conducted under the project direction of Ron Williamson and field direction of Robert MacDonald. The heavy clay soils were disk harrowed and allowed to weather prior to a re-survey of the property. As the high density of surface artifacts became apparent, the survey was re-started employing a transect interval of 2 metres. This resulted in the documentation of a virtually continuous scatter of lithics over the entire area. A controlled surface collection was then undertaken using a total station theodolite to map the artifacts encountered during the survey. Resurvey of specific locales and subsequent test excavations resulted in the recovery of 258 flaked stone tools and 10,700 pieces of chert debitage.

Twenty-one flaked stone tools were considered to be temporally diagnostic, including two

biface fragments identified as probable Paleo-Indian tools; one Early Archaic Nettling point mid-section; six Middle Archaic Brewerton points or point fragments; eight Late Archaic points (Lamoka, Normanskill, Adder Orchard, Crawford Knoll, Innes, and Ace-of-Spades); three Early Woodland Meadowood bifaces; and one Meadowood point base (Figure 2).

The remaining flaked stone tools are dominated by bifaces and biface fragments, ranging from crude to refined, many of which appear to be rejected blanks and preforms. There is also a significant number of point bases, tips, and mid-sections, suggesting that weapon refurbishment was an important activity at the site. At the same time, the frequencies of various domestic tools, including drills, various scrapers, and utilized flakes suggests that this area was not merely an important toolstone source, but also supported more sustained habitation.

Onondaga chert comprises nearly two-thirds of the debitage assemblage, no doubt reflecting the relative availability of this material along the Lake Erie north shore, together with its generally higher quality over the locally available cherts. Dundee Formation chert, also known as Selkirk chert, comprises nearly one fifth of the assemblage. The surprisingly high frequency of chert identified as Lockport Formation (14%) will be subject to further investigation, since the similarity of many of these cherts raises the possibility of mis-identification.

Shatter comprises the largest debitage category, and this includes distal flakes as well as flake fragments and other nondescript pieces of culturally modified chert. The high frequency of this category may in part reflect repeated cultivation of the heavy clay soil, which may have broken many flakes. Also, the low quality of the Dundee Formation chert no doubt resulted in a higher rate of flake detachment failure and unpredictable breakage. A significant proportion of the shatter has also been burnt, resulting in potlid fracture and flake breakage.

Primary reduction and thinning together make up about six percent of the assemblage. This suggests that much of the initial roughing out of blanks was undertaken right at the quarry, a trend which has also been noted at the Peace Bridge site. Approximately 30 percent of the assemblage is composed of secondary knapping and retouch flakes. This, together with the frequency of bifaces in various stages of reduction, suggests that blanks were brought back to the habitation area to be fashioned into bifacial tools. Failed bifaces were often re-worked into scrapers or other domestic tools.

Temporally diagnostic artifacts recovered from the Selkirk Cove sites document repeated use of the area by aboriginal peoples over the last 10,500 years. This is not surprising, given the environmental context of the sites. Throughout much of this period, this location has been situated near to the shore of Lake Erie. The lake would have provided an important canoe travel route along its shores, and would have been an important source of resources including potable water, fish, waterfowl, and wetland plants. Geological evidence suggests that lake levels may have been higher than at present in Early Paleo-Indian times, around 10,500 B.P., in Early Archaic times, around 8,500 B.P., and in Middle Archaic times, between about 5,500 and 4,000 B.P. Between these highstands, lake levels seem to have been significantly lower, hence the shoreline was considerably farther away from these site locations. Interestingly, these three highstand periods are represented at Selkirk Cove by probable Paleo-Indian biface fragments, a probable Nettling point, and several Brewerton points, respectively. Since Late Archaic times, Lake Erie seems to have been at or only slightly below modern levels, and this seems to be reflected in a nearly continuous occupation of the area through the Late Archaic and Woodland periods.

In addition, Selkirk Cove is situated at the confluence of the Sandusk and Spring creeks

which then flow into the lake. Regardless of the location of the lakeshore, stream confluences are often important locations for aboriginal settlement since they are nodes of canoe transportation that would have facilitated access to inland hunting and gathering territories. This particular confluence would have been particularly attractive to aboriginal settlement, owing to the oblique angle at which Sandusk Creek joins the lake and the rich wetland habitat and fishery which would have existed there.

Selkirk Cove is also situated immediately adjacent to important sources of Dundee Formation (Selkirk) chert. In addition, Bois Blanc Formation chert would have been available along stream valleys farther inland, while Onondaga Formation chert could have been transported to the site by canoe from Lake Erie coastal sources to the east. This high level of access to various toolstone sources is clearly reflected in the quantity of lithic debitage recovered from the sites.

Finally, paleoenvironmental analysis suggests that throughout much of the precontact era, the forests of the coastal zone were diverse in both structure and content. The increased ecological diversity of these habitats would have been attractive to aboriginal hunter-gatherer bands, providing them with the broadest range of game as well as plant foods such as nuts and fleshy fruits.

Taken together, these factors seem to have contributed to a sustained and/or very intensive occupation of parts of specific locales in Selkirk Cove. The surface distribution of artifacts indicates a strong correlation between settlement areas and elevated topographic features such as knolls and ridges, which were likely re-occupied many times over the millennia. This is not surprising given the imperfect to poor drainage characteristics ascribed to these soils. There is also a strong orientation of settlement areas adjacent to the seasonal tributary which flows southeasterly into Spring Creek. In addition to the major settlement clusters, material is more diffusely distributed throughout much of the property. These likely represent ephemeral campsites as well as coincidental refuse associated with the major campsites. Further work is required at a number of these sites.

THE BUTLER HOMESTEAD SITE (AhGs-18)

The planned development of a residential subdivision in Niagara-on-the-Lake led to the discovery of the remains of the first home of Colonel John Butler and his family in Upper Canada, which was occupied circa 1784-1813. Colonel Butler formed his famous Rangers, in 1777, to further the cause of the loyalist side in the American Revolution, and was instrumental in settling the loyalist refugees in Niagara at the conclusion of the war. Before the creation of the province of Ontario in 1791, Butler played a crucial role in developing the administrative, judicial and legislative character of the province by serving as a Judge of the Court of Common Pleas for the Nassau District. Butler was an active Superintendent of the Indian Department until his death in 1796, travelling to councils as a representative of the Crown.

Despite the fact that Butler was an influential man in the community, he did not live on a lot in the Town of Niagara proper as did other merchants and legislators. Rather, he lived on a farm about a mile from town, surrounded by the households of his sons Thomas and Andrew. Although written descriptions of Butler's household have not come to light, it is known from his will that African-American people worked on his property, and that he owned cattle. After the death of Catharine Butler in 1793, and John Butler in 1796, the house was occupied by son Johnson Butler and his wives Eve (to 1800) and Susanna (to 1813). The farm was one location where inhabitants of Niagara gathered after the Americans invaded on May 27th, 1813, and later was used as a location for American piquets in August of 1813. The Butler homestead was destroyed in December of

1813 during the American retreat from Niagara. It is unlikely that any structures were rebuilt on the property.

The Stage 4 excavation of the site, was completed under the project direction of Ron Williamson and the field direction of Ellen Blaubergs and Andrew Clish. Approximately 350 one-metre square units were excavated within the plough zone at the site, which was supplemented by topsoil stripping (Figure 3). This work resulted in the discovery of the stone foundation of the main structure and a cellar or subfloor pit from an outbuilding. The foundation consisted of sections of dry-laid red shale and more substantial mortared fieldstone, forming three rooms or sequential additions. There was a potential sub-grade entrance along the east wall of the middle room and a door between the south and middle rooms. A large portion of the white oak plank floor of the middle room remained intact and was entirely charred.

A small rectangular enclosure along the west wall appears to have been lined with tin on the basis of the recovery of hand wrought nails with small pieces of tin attached to them. An extensive burned wood floor was also recorded in situ within this enclosure. This room may have functioned as a larder within the structure, although the only material remains consisted of several wine bottle fragments and a metal barrel hoop. The Butler house was clearly "organic" in form, having evolved in character over time and did not follow any particular house form in design (e.g., Georgian). The variation in the wall construction is in keeping with both a general military form and with other known examples of Butler's Ranger's houses (Jon Jouppien, personal communication).

Located to the north of the foundation, the root cellar likely represents the location of a second structure. It was stratified, having been filled in on several occasions, at least one of which involved a considerable quantity of sand. The fill also included a concentration of building rubble consisting of fieldstones, a few bricks and metal architectural hardware (e.g., nails, hinges), and substantial quantities of 18th century domestic artifacts. Moreover, most of the 18th century military buttons recovered from the site were found in the units surrounding the root cellar, suggesting that this area or structure may have been the first to have been occupied on the site.

The excavations surpassed all expectations in terms of the sheer volume and quality of the material that was recovered. Approximately 50,000 late 18th century to early 19th century artifacts were recovered. The predominant ceramic wares on the site are pearlwares and creamwares, although numerous examples of finer, more expensive wares such as Chinese export porcelain and black basalt were found (Figure 4). While some of these ceramics were available into the early 19th century, no ceramic types post-dating 1830, such as refined white earthenware and vitrified wares such as ironstone, were found

Numerous glass and shell beads, including wampum, and at least one piece of trade silver, probably manufactured in Montreal in the 1780s, were also recovered. These objects were probably used as gifts or payments to aboriginal people or traded in return for furs. While trade silver and beads are not commonly found on ordinary domestic sites, their presence on this site is entirely consistent with Colonel Butler's role as Superintendent of the Indian Department.

Finally, a significant number of military artifacts such as metal coat buttons (especially the Butler's Rangers type), grape shot, musket balls, and gun flints were found. These were found in much higher numbers than would be associated with a typical late 18th century domestic site. Again, however, one would expect those items on Butler's homestead as he and his sons were important military figures of the day and their farm was involved in skirmishes during the War

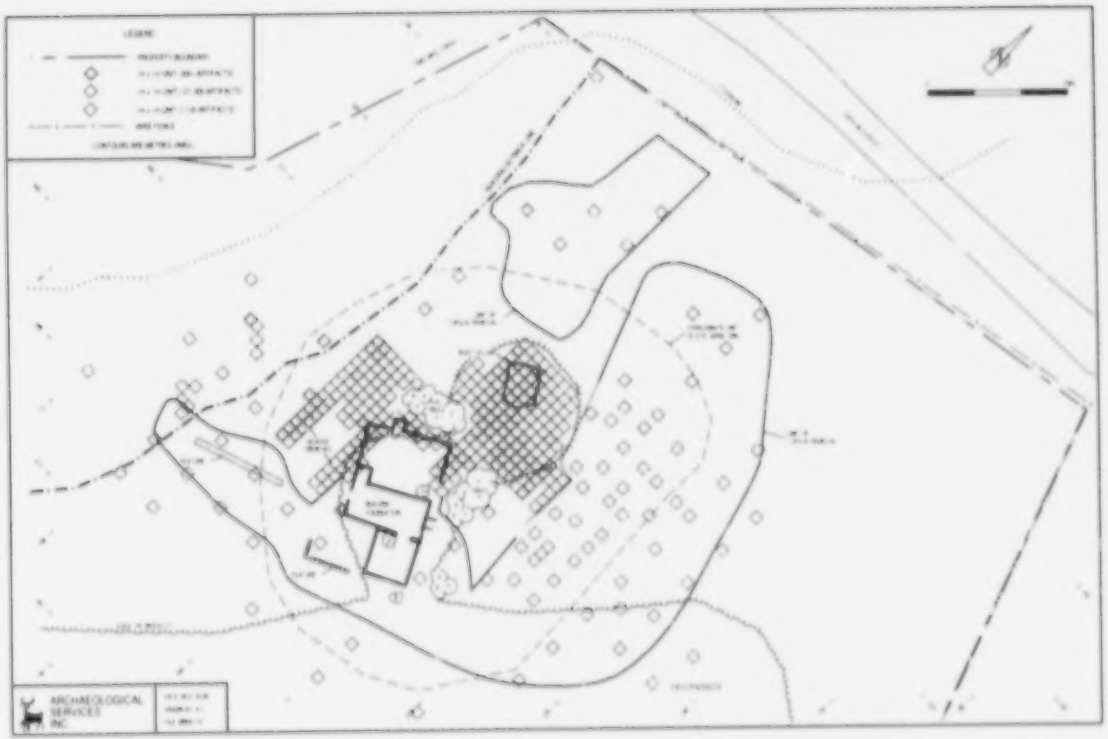


FIGURE 3. The Stage 4 salvage excavations at the Butler Homestead site (AhGs-18), Niagara-on- the-Lake, Ontario.

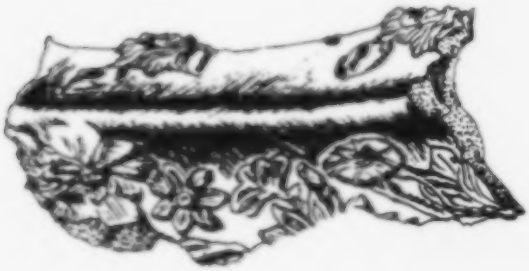


FIGURE 4. Black basalt vessel rim fragment recovered from the Butler Homestead site.

FIGURE 5. Royal Canadian Volunteers button from the Butler Homestead site. The 2nd Battalion of the RCVs was headquartered at Fort George between 1798 and 1802.

of 1812. Buttons from the uniforms of the Royal Canadian Volunteers regiment (Figure 5), whose main duties included, among others, logistical support for the Indian Department in its dealings with the aboriginal peoples, have also been found on the site and also point to Colonel Butler's occupation

The excavation of the Butler Homestead site has therefore provided a unique opportunity to document the daily activities of an important loyalist family through material culture and structural archaeological features. By comparing the site to contemporary archaeological sites in the United States and Ontario, it will be possible to identify the trends in the adaptive process by which the loyalists were transformed from refugees to citizens of the new province of Ontario. It has also been interesting to see how Butler's strong association with aboriginal people and the military is reflected in the archaeological record. Attention has also been paid to spatial patterning across the site area in an effort to eventually determine changes in land use between John and Catharine Butler's household and that of Johnson and his family

Few domestic sites of this time period have been excavated in Ontario, and the materi-l culture assemblage offers numerous potential insights into the availability and marketing of household products during the late 18th century and early 19th century The detailed analysis of the Butlers' household wares as indicators of their economic status and consumer choices, will lead to an appreciation of their day-to-day dietary preferences, and an enhanced awareness of their farm's operations, in the context of the very early agrarian period in Ontario

In recognition of the national significance of the Butler family, Parks Canada has assumed the responsibility of long-term maintenance of a significant portion of the site in order that the homestead be commemorated.

THE NEU SITE (ALGu-218)

The Neu site was found while test pitting along a wooded terrace on the north side of Berczy Creek on the west half of Lot 17, Concession 5, former Markham Township, now in the Town of Markham. Archival research suggested that the site represented a short-term occupation ca. 1794 to 1805, on the part of John Neu, one of a group of "Berczy settlers," who had emigrated from Germany in response to the offer of free land in Upper Canada. It is also likely that the site was associated with John Hacker, who owned the property between *circa* 1810 and 1817.

In view of the fact that the Neu site appeared to be linked to the earliest period of pioneer settlement in Markham Township, it was subjected to more detailed excavation. These investigations, carried out under the project direction of Martin Cooper and the field direction of David Robertson, were accomplished through the hand excavation of approximately 140 one metre units (Figure 6). During the course of this work it quickly became apparent that a significant portion of the site had not been disturbed by ploughing. Many of the units excavated in the primary core area proved to be deeply stratified, exhibiting as many as three major strata extending to depths of over 50 centimetres below the modern ground surface. The majority of these were excavated stratigraphically.

Within the undisturbed portion of the site, considerable quantities of stone rubble and slag were present in the uppermost stratum of black organic soil, which typically sealed a thick layer of almost pure wood ash that had clearly been produced by fires burning at very high temperatures. The slag and massive wood ash deposits together provide evidence for a blacksmith operation that was not noted in the original archival research, as both are characteristic by-products of metal working. Representative samples of both the slag and the wood ash were retained in order to further study the types of

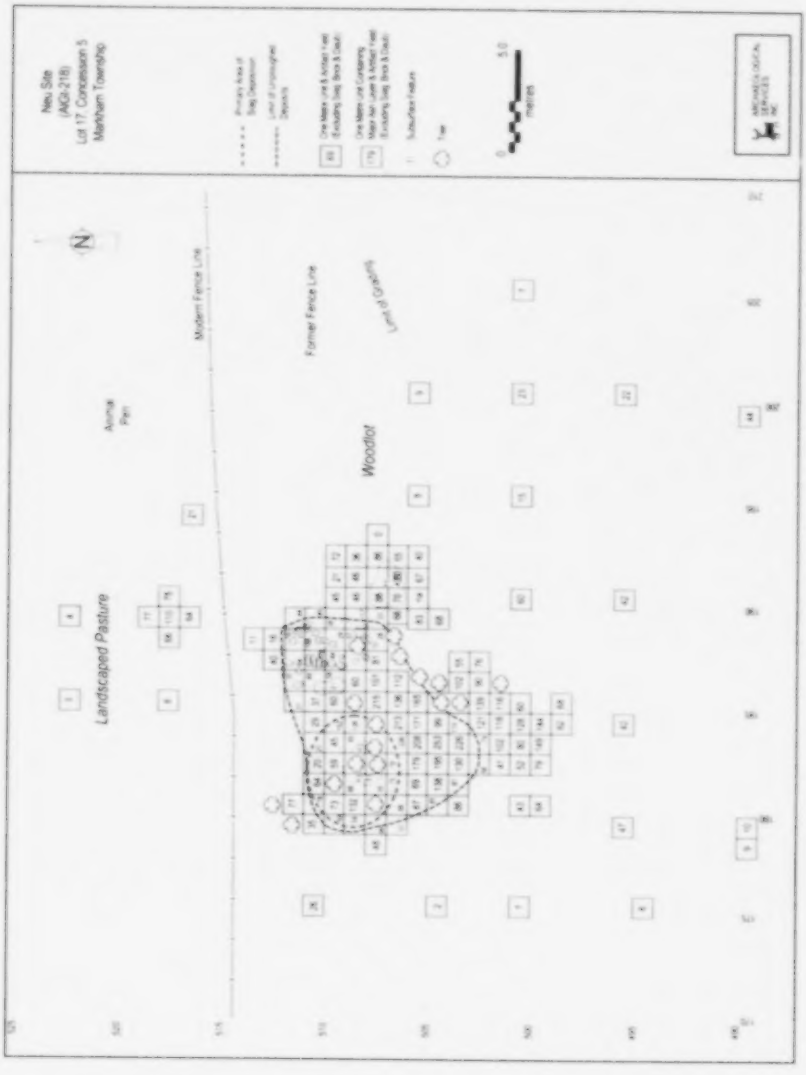


FIGURE 6. The Stage 4 salvage excavations at the Neu site (AlGu-218), Markham, Ontario.

activity carried out by the smith. In addition, metal files, chisels, cut and/or chiselled pieces of other metal tools, raw wrought iron stock and assorted scrap metal fragments were also common in the Neu site assemblage.

In addition to a major slag dump and extensive ash spreads, three subsurface features were encountered within the undisturbed portion of the site. These included a rectangular, flat-bottomed pit of undetermined function (Feature 1) that measured approximately 190 centimetres in length, 90 centimetres in width and 40 centimetres in depth below the topsoil-subsoil interface. The fill of this pit was comprised predominantly of ash mottled with wood charcoal and subsoil with lime mortar and comminuted brick fragment inclusions as well as some heavy stone rubble. The surrounding subsoil into which the feature had been cut was noticeably fire-reddened.

Feature 2 consisted of a 10 to 15 centimetre thick stratum of ash and fired soil that was bounded on its western edge by a single course of articulated stones that formed an alignment of approximately two metres in length. Its other edges were much less well defined, although the presence of many pieces of rubble and broken bricks on the northeastern and southern edges of the ash "floor" suggest that the structural elements of this feature were comparatively substantial.

Feature 3 represents a large, roughly ovate pit into which wood ash was regularly dumped and continued to be heaped up until it formed a mounded deposit that overflowed the feature. The pit was subsequently capped by stone rubble and slag waste although ash also continued to accumulate in the immediate area.

The balance of the site area within the woodlot proved to have been previously impacted by ploughing, likely related to mid-19th to early 20th century agricultural activity. This was apparent based on the shallower, more homogeneous character of the soil profiles, the absence of any stratigraphy, and somewhat less extreme variability in artifact recovery from adjacent excavation units. Interestingly, the majority of artifacts recovered from the ploughed southern and eastern portions of the site represent domestic rather than industrial debris. The one feature discovered within this portion of the site (Feature 5) is a ramped cellar or subfloor pit filled with demolition rubble.

To the north of the former fenceline that traversed the site, archaeological integrity proved to be far more seriously compromised, as a consequence of landscaping to expand the area available for a level pasture along the north side of the creek valley.

In total, approximately 10,000 artifacts were recovered from the Neu site. In addition to the smithy-related items discussed previously, the assemblage includes pearlware and creamware ceramic sherds, window glass, hand wrought nails, and faunal remains such as are typically found on early 19th century domestic sites. Among the more notable finds, however, are two 1812 and two 1814 pennies (Upper Canadian and U.S. currency) and numerous regimental buttons. Among the buttons identified to date are those of the Royal Artillery Regiment, the U.S. Regiment of Light Artillery, and the 60th Royal American Regiment.

REFERENCES

Andreae, Chris, Robert H. Pihl and Ronald F. Williamson

1998. "Summary of 1997 Research by Archaeological Services Inc." *Ninth Annual Archaeological Report, Ontario, Vol. 9 (New Series)*, 1998. pp. 7-16.

D.R. Poulton and Associates Inc

1996. The 1996 Stage 3 Archaeological Assessment of the Jarrett-Lahmer Site (AlGv-18), Draft Plan 19T-95079, City of Vaughan, Ontario.

Manuscript on file, Ministry of Citizenship, Culture and Recreation, Toronto.

Mayer, Pihl, Poulton and Associates Inc.
1989. An Archaeological Facilities Master Plan of the Town of Vaughan. Manuscript on file, Ministry of Citizenship, Culture and Recreation, Toronto.

Pihl, Robert H., David A. Robertson, and Ronald F. Williamson
1997. ."Summary of 1996 Research by Archaeological Services Inc." *Annual Archaeological Report, Ontario, (New Series)* 8:31-36.

Williamson, Ronald F., Shaun J. Austin, and Eva M. MacDonald
1999. "Summary of 1998 Research by Archaeological Services Inc." *Annual Archaeological Report, Ontario, (New Series)* 10:40-60.

Williamson, Ronald F. and Robert I. MacDonald (editors)
1997. *In The Shadow Of The Bridge: The Archaeology of the Peace Bridge Site (AfGr-9), 1994- 1996 Investigations.* Occasional Publications of Archaeological Services Inc. 1. Archaeological Services Inc., Toronto.

Williamson, Ronald F. and Robert I. MacDonald
1998. *Legacy of Stone: Ancient Life on the Niagara Frontier.* eastendbooks, Toronto.

Lynde House: The evolution of an 1812 tavern and homestead in Whitby, Ontario.

Donna Morrison and Lawrence Jackson (Advance Archaeology)

Introduction

In the summer of 1999, an archaeological crew from Advance Archaeology excavated the foundation area of the historic Lynde House on the north side of Dundas Street West (Hwy. 2) in Whitby (Jackson 1999; Morrison and Jackson 1999). Preliminary work was carried out by Donald Brown in 1986.

The Lyndes were one of the most prominent families of settlers in the area, having arrived in 1804; in fact, Lynde Creek, a major watercourse which runs along the east side of this property, is named after them. Their 2-storey house was said to have been the finest home between Kingston and York. It may have operated as an inn and "ale house" between 1811 and 1819, and Jabez Lynde also sold supplies to the army and ran dispatches for them during the War of 1812.

There is some dispute about when this house was actually built. Some argue that it dates to 1810, while others feel that Lynde could only have paid for such a fine dwelling from profits made during the War of 1812. One of the central questions of the 1999 field work whether the Lynde tavern had been located in this large frame house, or elsewhere on the property, perhaps on the site of an earlier log home.

P.O.Box 493
Port Hope, ON
L1A 3Z4

Although part of the house itself has now been moved to Cullen Gardens and part of it burned down in 1967, much information still remained in the ground to tell us how the house had been used from the early 1800s onward.

Methodology

An extensive search of a large area surrounding the house (75 metres by 75 metres) was made possible by first using a gradall to strip off the topsoil; features and unusual subsoil stains were then examined by cross-sectioning and hand excavation. This search failed to produce any evidence of a separate house structure, which leads us to believe that the tavern known to have been in operation during the War 1812 was located in the original family house. This idea is further supported by the archaeological finds recovered from hand-excavated areas surrounding the house foundation (see Plate1). Plate 2 shows the results of the excavation of the north wing basement (foreground) and the main house cellar (background).

Historical Artifacts Recovered

Some of the interesting materials recovered by the 1999 work include early blue shell-edged ceramics, military buttons, clay smoking pipes,

medicine bottles, wine bottles, coins, glasses and stemware, all of which strongly support the theory that this original structure was used as a tavern from around 1911-1819. The plan of the house would have allowed a side entrance to a tap room and parlour, with enough bedrooms for use as an inn, as well. The north (rear) wing was used as a large kitchen with 4 rooms for servants upstairs. Most of the recovered artifacts were badly broken by the heavy equipment used at three different points in the life of the Lynde House. The first point was in 1967 when a house fire destroyed the north (kitchen) wing and heavy machinery was brought in to remove the charred remnants of the walls and floors and to fill in the empty basement. This was apparently accomplished by bulldozing the surrounding yard and using whatever debris and soil was needed to fill the space inside the intact foundation. Consequently, any original historic-period midden deposits in the back and side yards were destroyed by this activity, leaving only remnants of shallow features and a completely jumbled mixture of artifacts and modern garbage dumped inside the north wing basement. Further damage to the site took place in the mid-1980s when the main wing of the house was lifted off the foundation stones and moved to Cullen Gardens. The entire east basement wall of this wing, as well as part of the front cellar, was destroyed during this process. Thirdly, more limited, localized disturbance took place in 1986 during the course of Brown's archaeological excavations.

Despite the fragmentary nature of the artefacts recovered, there were many items of interest recovered during the 1999 archaeological work. In addition to the household objects mentioned above, there were items relating to the house construction itself, such as abundant square cut iron nails and part of an antique front door bell. In addition, there were numerous children's toys dating from the late 19th century to the 1960s, including ubiquitous glass marbles and a plastic "Rocket Richard" action figure. Abundant 20th -century material was recovered from contexts both within and without the house foundation.

Other items that offered a more personal note to the excavations were the location of iron rings from the family's rainbarrel beside the side door, a cat burial in the backyard, and a portion of a 19th-century white marble headstone (although no gravesites were found).

Structures and Features Discovered

In addition to mapping the house foundation and searching for any proof (i.e. a foundation or other structural remnants) of an earlier homestead on the property, another goal of the research was to locate any outbuildings or midden deposits which would contribute to our understanding of 19th-century life for the Lyndes. As a result, following gradall stripping of the topsoil, any unusual subsoil stains or features were examined (see Figure 1).

Among the larger features discovered were, the well, which was located just to the east of the house and was in-filled with bricks, and the in-filled pond or wetland mentioned in historic documents, just to the northeast of the house. Other structural remains included the foundation blocks of a modern building which had been used as a store and gas station in the 1920s (to the west of the main house), and a hexagonal root cellar, also to the west of the house. The root cellar had been completely filled in with clean sand and no historic artefacts were recovered either inside or outside of it.

In addition to these major structures, there were numerous shallow hearth features located at various spots around the house, which may lend credence to the historic records that refer to War of 1812 soldiers camping beside the tavern on marches to and from Kingston and York. In addition to these hearths, there were a large number of ash pits also containing household waste (e.g. animal bone fragments, ceramics,

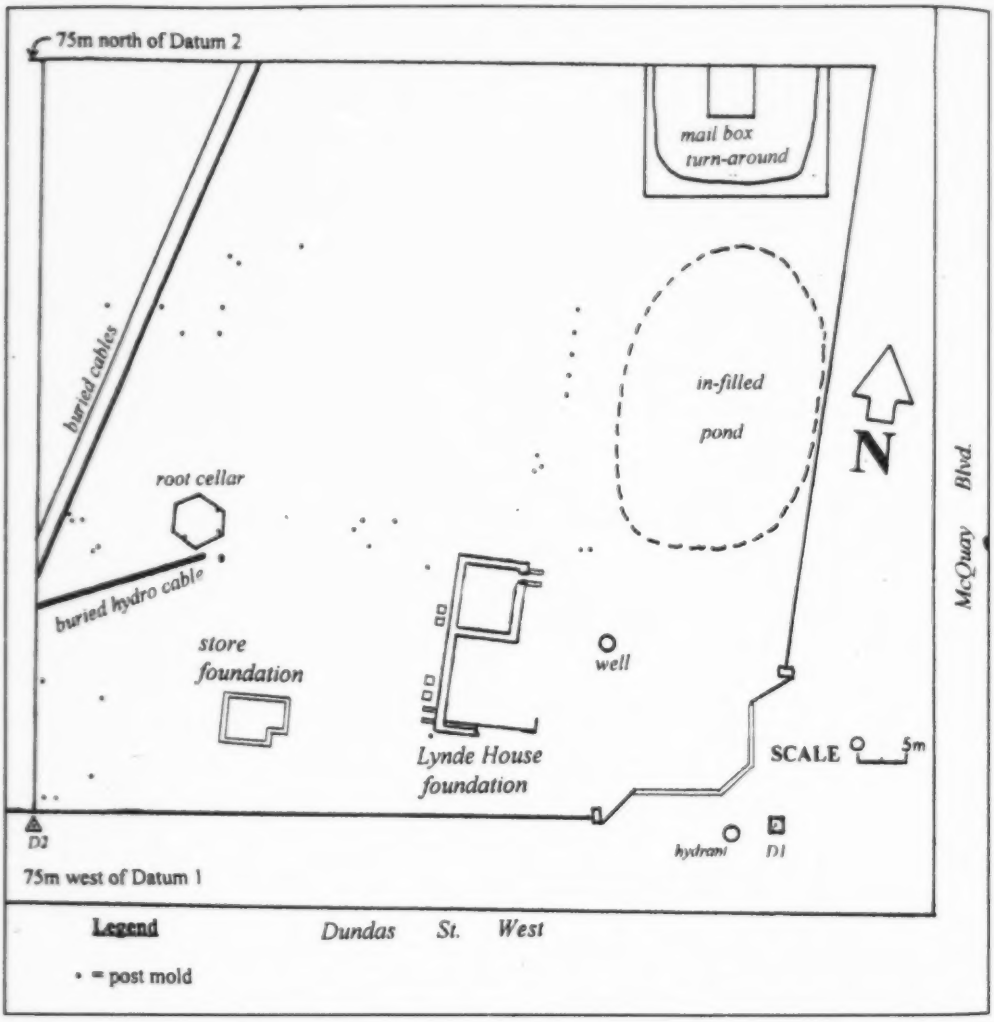


FIGURE 1. Map of Lynde House foundation and surrounding features

FIGURE 2. Hand excavation of the house foundations

FIGURE 3. View to the south of the Lynde House foundations (kitchen wing in foreground; main wing and Dundas St. in background).

nails etc.) as well as 35 fencepost moulds many of which were filled in with debris. Some larger, but empty, pits were discovered to the north and west of the house which may have been used as privies.

SUMMARY

Archaeological work at the historic Lynde House in Whitby provided supporting evidence for locating the War of 1812 tavern in the original frame house on this property. Additional structures, such as a well and root cellar, as well as numerous ash and hearth pits, were also located and will add to our understanding of life in this area during the 19th century as the analysis of a vast artifact assemblage continues. This knowledge will be used to educate the people of Whitby on an important part of their community's history, and perhaps will be incorporated into the Lynde House exhibit at Cullen Gardens in the near future.

REFERENCES

Brown, Donald A.
1986. Lynde House (AlGr-42) Preliminary Archaeological Study. Marshall Macklin Monaghan Ltd. and the Town of Whitby.

Jackson,Lawrence
(Northeastern Archaeological Associates)
1999. Stage 1 to 3 Archaeological Assessment of the Lynde House Foundation (Site AlGr-42) and part of Lot 31, Concession 2, Town of Whitby. Report prepared for G.M. Sernas and Associates and submitted to the Ministry of Citizenship, Culture and Recreation.

Morrison, Donna and Lawrence Jackson
(Advance Archaeology)
1999. Preliminary Report on the Stage 4 Archaeological Assessment of the Lynde House (AlGGr-42). Report submitted to the Ministry of Citizenship, Culture and Recreation

1999 CONSULTING WORK IN ONTARIO

ROBERT "BUD" PARKER

Parker Archaeological Consulting has been conducting cultural resource management in Ontario since 1990. Ten archaeological assessments were conducted in the Regional Municipality of Waterloo and the County of Wellington. This fieldwork and research resulted in the registration of eight new archaeological sites.

The proposed Kortright subdivision (Phase IV) 23T-97502 in the City of Guelph, County of Wellington was assessed in the Spring of 1999. The study of the 43.0 ha property resulted in the recovery of six widely scattered lithic artifacts (Onondaga chert), including a portion of a Late Woodland "Levanna" point type, circa 1200 A.D. This last findspot was designated as AjHb-47, and like the other finds it was not unexpected in these lands adjacent to Hanlan Creek. Also noted was a middle to late Nineteenth Century farmstead site (AjHb-48), representing the second generation of farming in an area originally settled by Europeans in the 1820's.

In the fall of 1999, the proposed Wilson Quarry in the Township of West Luther, County of Wellington, was archaeologically assessed. Three new archaeological sites were identified, including a single projectile point of Onondaga chert (AlHc-2), dating from the Middle Archaic period (Brewerton type), dating to circa 4500 B.P. The two other sites are historic farmsteads relating to the Robinson family settlement of this farm lot, designated AlHc-1 and AlHc-3, and dating to 1865-1895 and 1875-1960, respectively.

Finally, during the fall field investigation of the proposed Witmer Industrial Subdivision Class Environmental Assessment, in the City of Cambridge, Regional Municipality of Waterloo, 13 prehistoric findspots were identified. Three of these were diagnostic tools of Onondaga chert. AiHb-217, is a large corner-noted projectile point of the Brewerton type, dating to the Middle Archaic period, circa 4500 B.P. The other two, AiHb-218 and AiHb-219, are represented by Late Archaic, Genesee type projectile points (circa 3500 B.P.).

28 - 279 Sandowne Drive
Waterloo, Ontario
N2K 2C1

CONSULTING ACTIVITIES UNDERTAKEN IN 1999 BY THE LONDON MUSEUM OF ARCHAEOLOGY

ROBERT J. PEARCE

During 1999 the Museum continued work on several projects initiated in earlier years, and completed a number of reviews and Stage 1 background studies. Stage 2 and/or Stage 3 fieldwork was completed on 23 new projects, involving survey of 429 hectares and discovery or re-investigation of 44 prehistoric and historic sites. There was a common theme throughout 1999: survey a property, find multiple sites and findspots, recommend Stage 3 investigations at potentially significant sites.

STAGE 2 AND 3 FIELDWORK, BRANTFORD NORTHEAST INDUSTRIAL AREA – PHASE 2, CITY OF BRANTFORD

The Museum was retained by J. H. Cohoon Engineering Ltd. on behalf of the Corporation of the City of Brantford to undertake Stage 2 assessment of a 52 hectare parcel of land to be developed as an industrial park. The land is situated immediately south of Highway 403, west of Garden Avenue and north of Henry Street. Phase 1 of this park, lands west of the railway spur along the west edge of Phase 2, has been developed.

Prior to construction of Highway 403 from Brantford to Hamilton, Ministry of Transportation archaeologists had surveyed the corridor, but no sites had been found in the area abutting the north side of the industrial park. More recently, Mayer Heritage Consultants Inc. (MCHI) had surveyed lands of the proposed Garden Avenue Subdivision to the north of Highway 403 and west of Garden Avenue. Their survey encountered "49 locations with Aboriginal artifacts and 91 locations with Euro-Canadian cultural material. Most of these locations were widely separated isolated findspots of little archaeological significance and exhibited low information potential. Eight site registration forms (AhHb-66 to 73) were submitted ... two aboriginal and three Euro-Canadian sites (AhHb-66 to 70) were recommended for Stage 3 investigation" (Mayer and Hawkins 2000:18).

The London Museum of Archaeology's Stage 2 survey of the industrial park lands resulted in findings very similar to that of MCHI on lands to the north – there were prehistoric artifacts scattered throughout the entire area. Cohoon Engineering provided the services of their surveyors to record all of our finds using a laser transit and they plotted the locations on detailed topographic maps of the area to be developed. In the end, we registered a total of nine sites (AgHb-228 to 236) and 46

1600 Attawandaron Road
London, Ontario
N6G 3M6

isolated findspots (London Museum of Archaeology 1999a).

The property has a unique rolling topography – hills and dales between several tributaries and drainage channels flowing in a general eastward direction to Fairchild Creek. There is a difference in elevation of over 11 metres across the property. All nine of the registered sites were on the high points of land, whereas the findspots were distributed not only on other high spots but also at lower elevations on the slopes and lower parts of knolls and ridges.

The property was divided by a north-south running fence. Conditions on either side of the fence were very different and attest to the importance of letting ploughed land weather sufficiently prior to archaeological survey. The fields on the western two-thirds of the property had been ploughed and cultivated in the late fall of 1998 and had weathered all winter before our survey in May 1999; all nine of the sites and 42 of the findspots discovered were located in this area. The eastern one-third of the property had only been ploughed in the spring of 1999, about three weeks prior to our survey in June; we located only four findspots here. Since the results of our survey on the eastern fields were so radically different from our survey of the western fields, we recommended that the eastern fields be re-ploughed and cultivated in the fall of 1999 and that they be allowed to weather all winter for re-survey in the spring of 2000. Hopefully we will make it back to the property before unauthorized persons remove artifacts from this parcel, a common problem in southern Ontario and especially in the Brantford area.

The findspots included a wide variety of lithics, such as flakes, cores, biface fragments and scrapers made on Onondaga, Haldimand and local till cherts. There were also three diagnostic points dating to the Middle Archaic, Late Archaic and Iroquoian periods.

One of the registered sites (AgHb-231) had mixed components: 25 prehistoric lithic artifacts and 2,361 historic items. The historic material from this site relates to the farmstead of the David Roy family, who occupied the property continuously from 1854 to 1954. This site was deemed to be insignificant due to the fact that the components were intermixed and the historic material was dominated by twentieth century items.

Stage 3 investigations were recommended for the other eight registered sites on this property.

Two of the sites (AgHb-228 and 230), located in the southwest corner of the parcel, were clearly different from the others: both were dominated by flakes of Haldimand chert. Although no diagnostic items were recovered, the high frequencies of Haldimand chert suggested that both sites might be small camps or lithic workshops occupied during the transitional Late Paleo-Indian to Early Archaic period, and that Stage 3 investigations might uncover some typical Hi-Lo points made on that material, characteristic of this period. The Stage 3 investigations in late October were cut short by the weather - it was too wet to permit effective screening of the heavy clay soil. We managed to excavate 16 one-metre squares at one of these sites, and 17 at the other one. Several flakes and cores, primarily Haldimand chert, were recovered but there were no diagnostic items and nothing resembling a Hi-Lo point was found (London Museum of Archaeology 1999b). This project is to be continued in 2000.

STAGE 2 ASSESSMENT, HAMPTON ESTATES, BRANTFORD

Late in 1999 J. H. Cohoon Engineering Ltd. requested that the Museum attempt to undertake a Stage 2 assessment of lands to be developed as Hampton Estates (residential subdivision). This 22 hectare parcel is situated on primarily agricultural land on a series of terraces north of and overlooking the Grand River, just east of Oak Park Road and east-southeast of

several gravel pits.

As on the industrial park lands discussed above, our survey of Hampton Estates encountered prehistoric and historic artifacts scattered throughout the entire property. Three notable concentrations of prehistoric lithic material were registered as sites (AgHb-238 to 240), while all of the other items were recorded as findspots (London Museum of Archaeology 1999c).

The three sites on this property yielded quantities of Haldimand chert and are provisionally interpreted as small camps or lithic workshops dating to the transitional Late Paleo-Indian to Early Archaic period (Hi-Lo phase). Stage 3 investigations are to be undertaken by the Museum in 2000. Also, we anticipate that further surface discoveries will be made after the fields have weathered all winter.

STAGE 2 ASSESSMENT, SUNNYSIDE SUBDIVISION, ST. GEORGE

A third project of 1999 in Brant County involved the Stage 2 assessment of the proposed Sunnyside Subdivision in St. George (North Dumfries Township). The work was compieted for Planning & Engineering Initiatives Ltd. (Hamilton) on behalf of Starlite Homes. This 20 hectare parcel incorporates an abandoned sand and gravel pit, but the northern half of the property was a single large cultivated field with sandy loam soil.

Our survey encountered six insignificant findspots (all prehistoric lithic material, AhHb-75 to 80) and one concentration of prehistoric lithic items registered as a potentially significant site, AhHb-74 (London Museum of Archaeology 1999d).

The Sunnyside site yielded 36 items as a diffuse scatter over a 50 metre by 30 metre area: two diagnostic points, two biface fragments, three scrapers, three utilized chert flakes and 26 pieces of chipping detritus. All but one of these items is Onondaga chert; the exception is a utilized flake of local till chert. The two points are typical side-notched "small points" (i.e. Crawford Knoll type) dating to the Late Archaic period circa 2500 – 1000 B.C. Two of the scrapers are snubnose types also characteristic of the Small Point Tradition (Ellis, Kenyon and Spence 1990:110).

Stage 3 investigations of this site were recommended (London Museum of Archaeology 1999d) and are to be undertaken by the Museum in 2000.

STAGE 2 AND 3 FIELDWORK, SUBDIVISION IN SARNIA

In August 1999 the Museum undertook a Stage 2 assessment of a 16 hectare parcel of land to be developed as a residential subdivision at the eastern edge of Sarnia, Lambton County.

The property, southwest of the intersection of London Road and Blackwell Sideroad, was a flat agricultural field that had been used as a dumping ground for waste materials. There were hundreds of cut and butchered animal bones everywhere, probably distributed there amid manure spread by the tenant farmer. Furthermore, a former motel just beyond the northern edge of the property had used the parcel as a midden to dispose of hundreds of kitchen utensils (especially spoons) and broken fragments of plates, cups and saucers. Aside from this waste material, the surface was littered with thousands of rocks, pebbles and fossils, all part of the natural matrix of glacial till covering this section of Sarnia.

Amid this junk we found some prehistoric lithic artifacts. One location, registered as AfHn-18, consisted of only two flakes of Kettle Point chert. The second location, in the northwest corner of the property, was infinitely more exciting.

Site AfHn-19 was initially defined as a diffuse scatter of lithic and ground stone artifacts over an ovate area 120 metres east-west by 110 metres north-south. The artifacts extended right to the northern edge of the property, and no doubt continue northward onto private,

uncultivated land (which we were not permitted to examine). A total of 106 artifacts were recovered and mapped as a series of 88 stations by transit and stadia rod. Besides the lithic and ground stone artifacts we observed large numbers of butchered animal bones and kitchen utensils, and logically named this the "Spoon" site. There was a notable concentration of prehistoric items, with far more artifacts in a 70 metre diameter area at the northeast side of the site; this section of the site yielded the only three diagnostic artifacts (points) that were found on the surface (London Museum of Archaeology 1999e).

Each of the three points is different, and along with the other material found suggest this was a multicomponent camp that had been frequented at various time periods. One point is a classic Hind type dating to the Small Point Tradition of the Late Archaic period; it is made on Onondaga chert. The second point is a stemmed or corner-removed specimen which could be classified either as a crude variant of the Hind type or, more likely, a poorly-made Adena type of the Early Woodland period; it is made on Onondaga chert. The third point is a Saugeen type side-notched item of the Middle Woodland period made on Kettle Point chert.

The assemblage from the surface also included one biface, one drill, four scrapers, 11 cores, 65 pieces of chipping detritus, two hammerstones, one abrader, one metate fragment, and 12 miscellaneous pieces of ground stone. We retained five oyster shells but could not determine if these related to the prehistoric use of the site.

During the surface collection of this site, we recovered a few pieces of material which we initially believed could have been very poorly-made, poorly-fired Early Woodland pottery. These were subsequently examined by James V. Wright (Curator-Emeritus, Canadian Museum of Civilization). He concluded they were clumps of clay intermixed with grit, micro-flakes of chert, micro-fragments of bone and plant fibers/organic material, which had been balled up; these pieces were not fired. We could not ascertain if these mysterious pieces relate to the prehistoric occupation of the site, or if they are the product of some type of natural phenomena.

The surface finds suggested this was a potentially significant site, and one week after the completion of the Stage 2 fieldwork, we initiated Stage 3 investigations. Forty additional artifacts were surface collected, and we manually excavated 30 one-metre squares at various locations across the site area. Prehistoric artifacts were recovered from each square, with counts ranging from 6 to 53 artifacts per square and an accumulated net of 547 artifacts.

The Stage 3 excavations encountered a further three diagnostic projectile points plus four tip fragments from finished, broken points. The three new points include another Hind-like specimen (Late Archaic), another Saugeen specimen (Middle Woodland) and a ubiquitous Brewerton side-notched type (Late Archaic).

The combined Stage 2 and Stage 3 fieldwork resulted in the recovery of 693 artifacts: six diagnostic points, four point tip fragments, five bifaces, one drill, eight scrapers, two wedges, 36 cores, nine utilized flakes, 579 pieces of chipping detritus, five hammerstones, two metate fragments, one abrader, four chipped slate objects, 17 pieces of miscellaneous ground stone (including celt fragments) and 11 oyster shells. Also recovered from excavated squares were three true fragmentary ceramic sherds (tempered and fired).

The artifacts from this site were casually examined at different times by other archaeologists including Neal Ferris and Chris Ellis, whose comments were incorporated into our licence reports (London Museum of Archaeology 1999e; 1999f) and the present report.

The collection of lithic artifacts is truly amazing, in that so many different types of chert were present at this one location.

Approximately 40% are Kettle Point chert and 20% are Onondaga chert. The remaining 40% of the lithic assemblage consists of various grades, forms and colours of secondary till chert plus one to three pieces of each of at least three exotic or foreign-to-the area types: Bayport (Michigan), Pipe Creek (Ohio), and Selkirk or Dundee Formation (western end of Niagara Peninsula, Ontario). In addition, we recovered one core of a gray and white banded chert (not Bayport) which originates from deposits in western Michigan (i.e. eastern shore of Lake Michigan) (Chris Ellis, personnal communication 1999).

Aside from the points described above, two of the bifaces were regarded as diagnostic. One is a well-made item of Selkirk chert now interpreted as a Meadowood (Early Woodland) cache blade, while the other is an unfinished blank of Selkirk chert with a form and flaking pattern identical to that found on preforms and points from several Small Point Tradition Late Archaic sites including the Crawford Knoll site. Some of the scrapers from the Spoon site are virtually identical to those from Small Point Tradition Late Archaic sites.

There was a curious distribution of the diagnostic artifacts across the site. One of the squares excavated near the centre of the 70 metre diameter where surface finds had been concentrated yielded four different items: a Brewerton Late Archaic point, a Crawford Knoll Late Archaic point, an Early Woodland period Meadowood cache blade and a Saugeen Middle Woodland point. The three ceramic sherds were within 20 metres of this cluster, while all of the other diagnostic items were scattered around the outer periphery of the site.

The lithic assemblage from the Spoon site includes various types of complete and fragmented tools. The detritus includes primary, secondary and tertiary reduction flakes, pieces of shatter, biface thinning flakes and scraper retouch flakes. Together with the cores, the assemblage indicates that raw material was brought to the site, that cores were worked into usable blanks and tools on the site, and that finished tools were used and maintained/sharpened at this location.

The unfortunate conclusion from the Stage 2/Stage 3 fieldwork is that all of this material is contaminated – intermixed multiple prehistoric occupations from the Late Archaic to Middle Woodland periods, plus use of the site area in recent times as a dumping ground for modern materials. Nevertheless, the site holds some information potential and Stage 4 mitigation of the most productive areas of the site were recommended for 2000 (LMA 1999f).

REFERENCES

Ellis, Chris, Ian Kenyon and Michael Spence
1990. "The Archaic." In *The Archaeology of Southern Ontario to A.D. 1650*, edited by Chris Ellis and Neal Ferris. Occasional Publication of the London Chapter, Ontario Archaeological Society, Number 5:65-124. London.

London Museum of Archaeology (LMA)
1999a. Report on a Stage 1 and Stage 2 Archaeological Assessment of Brantford Northeast Industrial Area – Phase 2, City of Brantford, Brant County. Prepared for J. H. Cohoon Engineering Ltd. (Brantford) on behalf of The Corporation of The City of Brantford. Licence report 1999-021-010 submitted to the Ontario Ministry of Citizenship, Culture and Recreation.

1999b. Report on the Initiation of Stage 3 Archaeological Investigations at Sites Within the Brantford Northeast Industrial Area – Phase 2, City of Brantford, Brant County. Prepared for J. H. Cohoon Engineering Ltd. (Brantford) on behalf of The

Corporation of The City of Brantford. Licence report 1999-021-020 submitted to the Ontario Ministry of Citizenship, Culture and Recreation.

1999c. Report on a Stage 1 and 2 Archaeological Assessment of "Hampton Estates", City of Brantford, Brant County. Prepared for J. H. Cohoon Engineering Ltd. (Brantford) on behalf of Brant Star Developments Ltd. (Brantford).

1999d. Report on an Archaeological Assessment of "Sunnyside" Subdivision, Part Lot 6, Concession 3, South Dumfries Township, Brant County. Prepared for Planning & Engineering Initiatives Ltd. (Hamilton) on behalf of Starlite Homes Ltd. (Brantford). Licence report 1999-021-014 submitted to the Ontario Ministry of Citizenship, Culture and Recreation.

1999e. Report on a Stage 1 and Stage 2 Archaeological Assessment of a Proposed Subdivision in Sarnia, Lambton County. Prepared for Gray, Bruce, Kowalyshyn (Sarnia) on behalf of the proponent. Licence report 1999-021-013 submitted to the Ontario Ministry of Citizenship, Culture and Recreation.

1999f. Report on the Stage 3 Archaeological Investigations of the Spoon Site (AfHn-19), Sarnia, Lambton County. Prepared for Gray, Bruce, Kowalyshyn (Sarnia) on behalf of the proponent. Licence report 1999-021-018 submitted to the Ontario Ministry of Citizenship, Culture and Recreation.

Mayer, Robert G. and J. Trevor Hawkins (Mayer Heritage Consultants Inc.)

1999. "Mayer Heritage Consultants Inc. Continuing Study Series: A Look at Mitigation and Heritage Investigations Conjoined by Purpose or Project." *Annual Archaeological Report, Ontario Volume* 10:15-26. Ontario Heritage Foundation, Toronto.

CONSULTING ACTIVITIES OF WOODLAND HERITAGE SERVICES AND SETTLEMENT SURVEYS LTD. IN NORTHERN ONTARIO

JOHN POLLOCK AND LUKE DALLA BONA

During 1999, John Pollock of Settlement Surveys Ltd., together with Luke Dalla Bona of Pictographics Ltd. formed a new archaeological consulting firm called Woodland Heritage Services Ltd. (www.woodlandheritage.com) incorporated in 2000 with offices in New Liskeard and Sault Ste. Marie, Ontario. Ted Binguis is an associate based at Thunder Bay. The firms undertook more than eighty projects during 1999 in the Blind River, Sudbury, North Bay, Mattawa, Temagami, Lake Timiskaming, Sault Ste. Marie, Thunder Bay and James Bay areas. Three staff members and one student were involved in these activities. One of the more interesting projects in the James Bay area is described below.

STAGE ONE & TWO ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT OF THE WA-SH-OW JAMES BAY WILDERNESS CENTRE DEVELOPMENT PROJECT, NORTHEASTERN ONTARIO

This project involved an inventory and assessment of cultural heritage sites and features prior to the proposed development by the Moose Cree First Nation of the Wa-sh-ow site; a Cree owned and operated Ecotourism Wilderness Centre/Tourist Development Project.

Archaeological fieldwork was undertaken by John Pollock and Luke Dalla Bona. The Wah-sh-ow site itself (EaGw-1), is situated at the bottom of Hannah Bay (part of James Bay) on the lower Harricanaw River approximately 10 kilometres upstream from the mouth, on the eastern shore (see Figure 1 for a location map).

CREE ARCHAEOLOGICAL HISTORY IN THE JAMES BAY AREA

Despite the fact that James Bay is one of Canada's major ocean areas and one of the first places reached by Europeans, relatively little archaeological work has been done in the area (Dawson 1984:28).

Prior to the arrival of Europeans and European trade goods in what is now Canada, the Moose River Cree First Nation People lived on the lower to middle portions of the Moose River Basin and on the shores and rivers of James Bay.

In the Harricanaw River (Wa-sh-ow area) area the Cree have a long oral history especially with traditional Goose Camps. During the early historic era, the Hudson's Bay Company (HBC) usually provided the Cree with a feast and distributed brandy before the hunt; brandy

P.O.Box 2559
17 Wellington Street
New Liskeard, ON P0J 1P0

would also be provided to the Cree who brought in the first goose of the season. Cree leaders of the goose hunt were provided with special coats and hats to signify their status in the eyes of the Company. These leaders were also provided with extra tobacco and brandy, which they in turn would often share with the other hunters who were referred to by the HBC as the 'followers' (Lytwyn 1993: 313-315)

The killed geese as well as feathers and quills would be taken to Moose Factory Island by longboat or, after freeze-up, by dog team (Rich & Johnson 1954: 82, 89, 90). In these years, the HBC could obtain 700 geese at Hannah Bay in a poor fall hunt and 4,700 birds in a good fall hunt (Rich & Johnson 1954: 151).

Once the geese were gone, the Hannah Bay site remained occupied for the winter. Two men would stay there "hunting, fishing &c" and "in charge of the powder and shot left there" for the spring hunt (Rich & Johnson 1954: 85, 92). They hunted partridge, "white partridge" (ptarmigan) and foxes (Rich & Johnson 1954: 91, 92, 95, 99, 102).

A few goods might be sent to Hannah Bay in early April (Rich & Johnson 1954:1 08109) prior to the spring goose hunt. The longboat would be sent there in June to bring back the killed geese (Rich & Johnson 1954: 118).

While the HBC men might salt the geese and pack them in casks, Cree women often dried and smoked geese as well. These women also sorted and cared for the feathers and quills, and may have helped transport geese to the post (Lytwyn 1993:).

The above report section is based on a paper prepared for the Moose Cree First Nation by John S. Long in 1999.

CREE ARCHAEOLOGICAL/ CULTURAL SITES LOCATED BY WOODLAND HERITAGE SERVICES IN 1999:

Fieldwork for the project was undertaken during September 1999. The Wa-sh-ow / James Bay Wilderness Centre Development Project area consists of a 2.23 hectare (5.5 acre) area. The buildings on the site date to the Ontario Northland Railway's "Hannah Bay Goose Camp" which closed in 1992. The Wa-sh-ow site is part of a traditional hunting and trapping territory for several Moose Cree First Nation families, and to this day is a traditional location used by Brody Echum and others. It was also the site for a Hudson's Bay Company trading post until the late 19th century.

The immediate camp area is covered by a mixed wood (spruce and aspen) forest. Larger trees are only found near the shore and on well drained lands. A poorly drained, flat clay plain or muskeg extending back from the shoreline dominates the area landscape.

The study area had a high archaeological site potential based on its location and the presence of traditional Moose Cree campsites and burial ground. Five archaeological sites were recorded during the study and have been registered with the Province of Ontario's Borden Number site data base as EgGw-1 to 5 (see Figure 1 for site locations).

SITE 1 (EGGW-1)WA-SH-OW SITE - HANNAH BAY GOOSE CAMP

The Hannah Bay Goose Camp (*circa* 1954-1992), consisted of guest cabins, a sauna, outhouses, dining room, kitchen and office. There was also a bridge across the unnamed creek. The site is located on the north side of a small creek that joins the east bank of the Harricanaw River At the time of our field visit in September1999, most of the old ONR buildings had been torn down and the site prepared for construction of the new tourism facility (Figure 2).

The site was examined for surface artifacts and tested by means of twenty-three subsurface test pits. All subsurface tests were negative, but the remains of an earlier Moose Cree cabin/ tent frame and some trade beads were recorded (Figure 3).

The above site was not the first site of the ONR goose camp (Elder Brodie Echum). The first site which was only used for a short period, was on the north bank of Shonaniwau Creek (see Site 4 below).

Site 2 (EgGw-2) - Traditional Village and Trading Post Area

This site which is a traditional camping area for the Moose Cree First Nation, is located immediately across from the Wa-sh-ow site (Figure 1 and 2) on the south side of a small unnamed creek that joins the east bank of the Harricanaw River. It has been used by many generations of Cree families and was the location of the 1943 (HBC4) Hannah Bay Post and may also have been the location of and earlier HBC Post, HBC3J established in 1849 as a small outpost of Moose Factory. The fall 1999 archaeological work consisted of clearing/ cutting away a thick mat of grass and placing six one meter square test pits in the vicinity of the former 1940s era HBC Post. The post area was shown to us by Elders Sinclair and Eddie Trapper. Three of the six pits produced artifacts possibly indicative of a trading post, such as cut bone from large and small mammals, bird bone, metal fragments, nails and glass fragments. However, no diagnostic artifacts were recovered that could be dated or attributed directly to the HBC. A possible former hearth or stone feature was located by the subsurface testing. Further archaeological excavation is needed in order to define the post location and other archaeological features that are present on the site.

Site 3 (EgGw-3)- Hannah Bay Revillon Freres Post

This site which was shown to Dr. Pollock by Elder Eddie Trapper, was active from *circa* 1914-1930s and is located on the east side of the Harricanaw river (see Figure 1). As John Long mentions:

"Cree Elders at Moose Factory clearly recall where the French Company's post was located. It was immediately south or upriver from where Brodie Echum's trapping cabin is located, on the north side of the next creek, just opposite the south end of an unnamed small island." (Long 1999).

Test pits were placed on both sides of a small unnamed creek but positive results were only obtained from the north side of the creek. Subsurface testing produced a large quantity of tin cans but very little in the way of other artifacts. It is possible that most of the site has eroded into the river as there is very active and substantial yearly bank erosion. A large brass propeller was found eroding from the bank.

Site 4 (EgGw-4) - North Bank of Shonaniwau Creek

This site is located on the north bank of Shonaniwau Creek where it joins the Kesagami River (Figure 1). It was an earlier location for the ONR goose camp and is presently used as a base camp by Kenny Echum. Six test pits were dug and three produced relatively modern metal pieces. Figure 4 is a photograph of a traditional Cree structure found on the site.

South Bank of Shonaniwau Creek - Site 5 (EgGw-5)

This traditional camping ground is the site of John Fletcher's (JFl) fall camp and it is located on the south bank of Shonaniwau Creek where it joins the Kesagami River (see Figure 1). Ten test pits were placed in the vicinity of a canvas tent camp, but no buried artifacts were found during this preliminary testing.

Conclusion

In spite of the preliminary nature of the fall 1999 project, a total of five archaeological and traditional sites (EgGw-1 to 5) were located and registered during the fieldwork. Construction of the facility within the designated development area of the main Wa-sh-ow site area will not damage any significant Cree

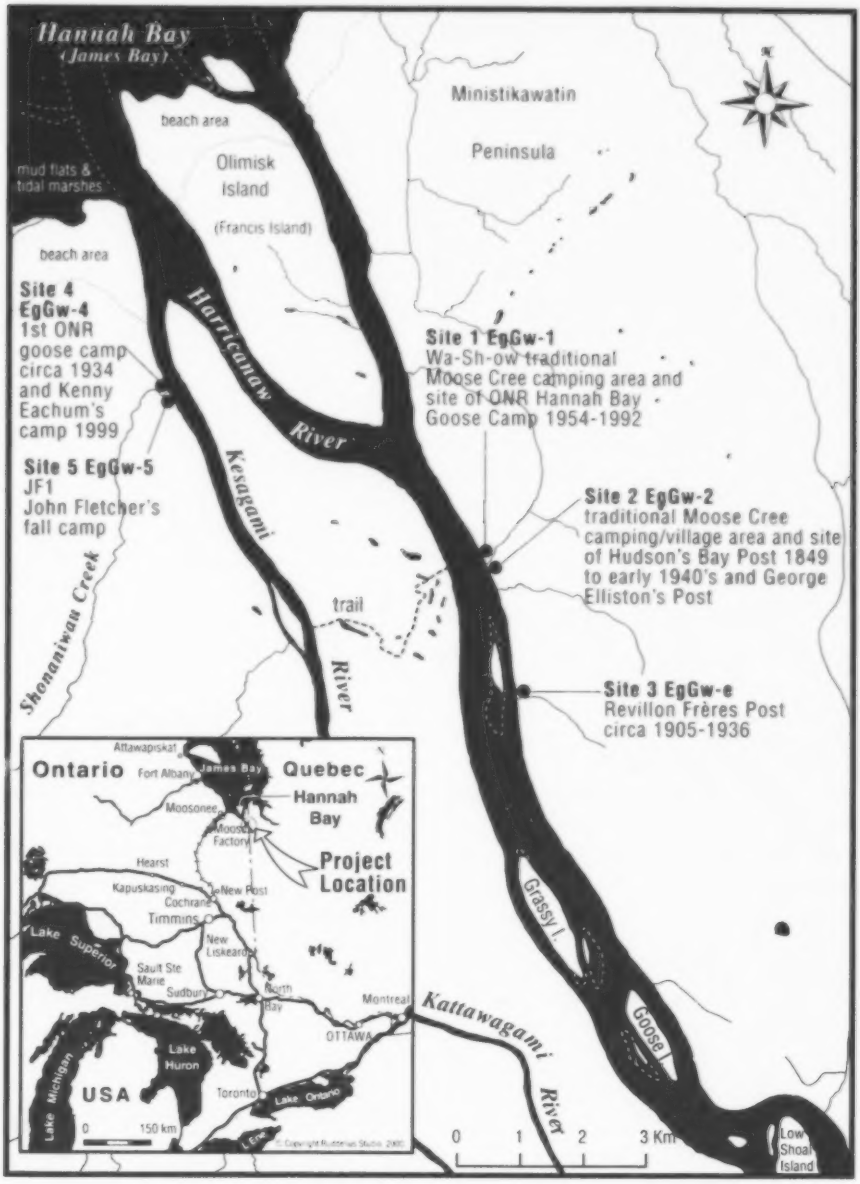


FIGURE 1. Map of Hannah Bay area showing archaeological sites located.

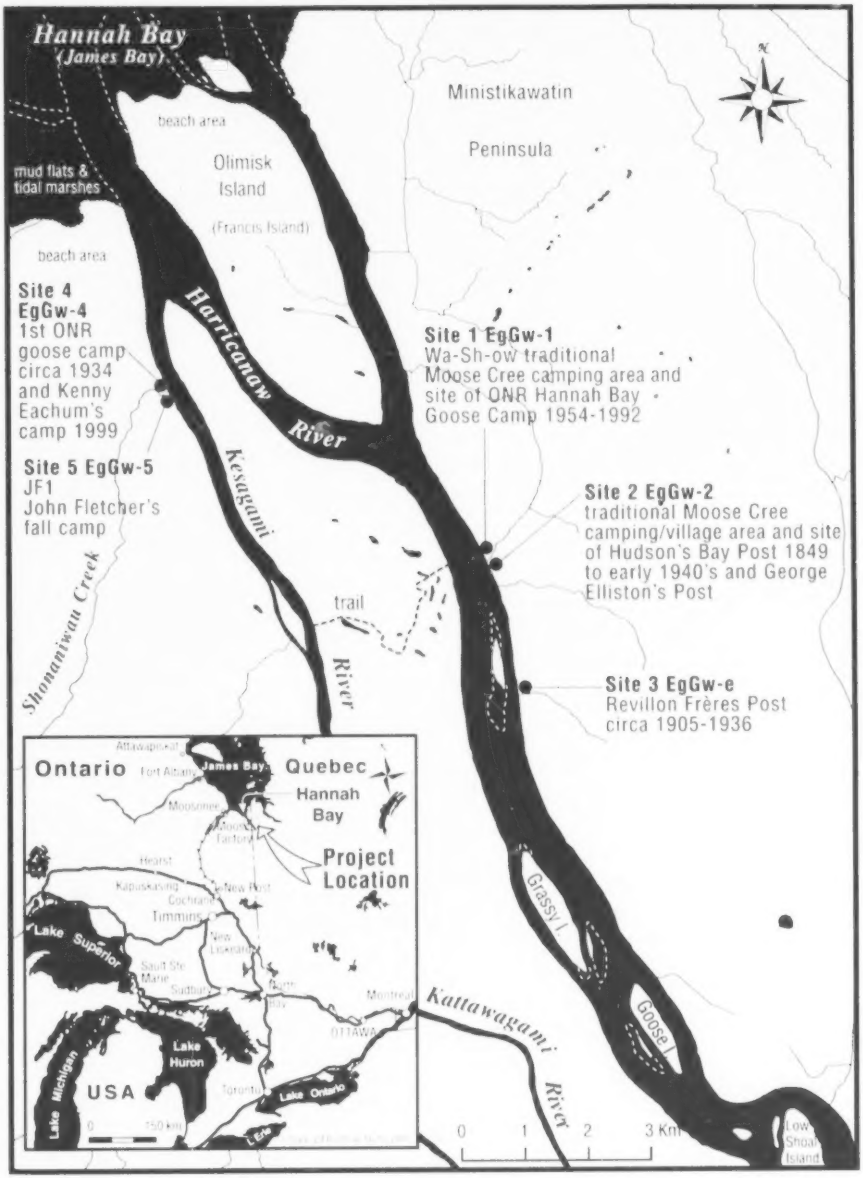


FIGURE 1. Map of Hannah Bay area showing archaeological sites located.

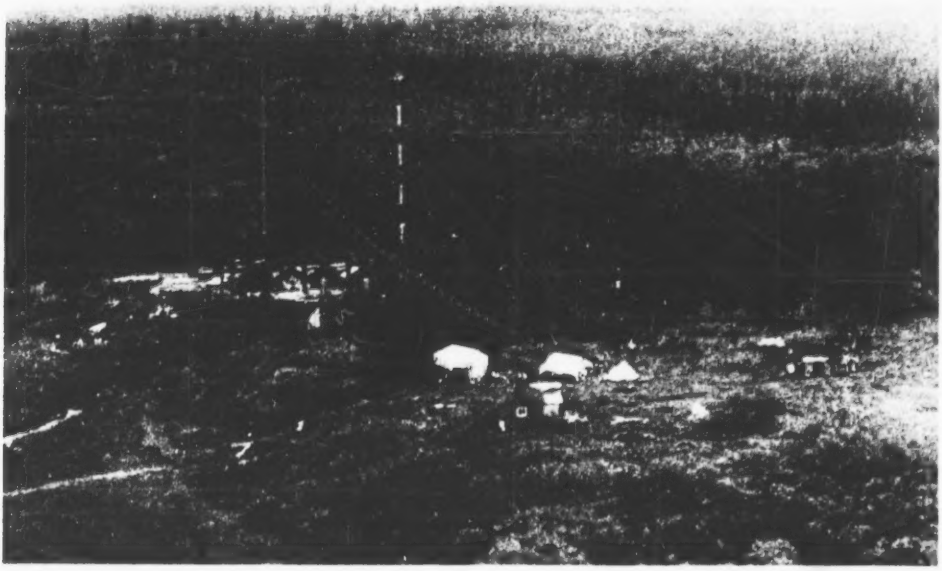


FIGURE 2.. Aerial view of the Wa-sh-ow and Traditional Moose Cree Village site area, September 1999

FIGURE 3. Elder Sinclair Trapper and historian Cecil Chabot testing a Cree camping area which predates the 1954 Goose Camp at the Wa-sh-ow (EgGw-1) site area.

FIGURE 4. Traditional Cree structure on the north bank of Shonaniwau Creek, a tributary of the Kesagami River at site EgGw-4.

cultural sites. However, development of the traditional Cree camping/village area (EgGw-2) on the area south of the creek and adjacent to the Wa-sh-ow site could damage presently unknown buried cultural values and the remains of former trading posts. Further archaeological work is needed prior to the development of this area.

The limited and very preliminary 1999 archaeological work has indicated that the Wa-

sh-ow area is and has been, an important and significant Cree land use area for many generations. There is a rich cultural history buried on the many sites in the area. Much archaeological work remains in order to fully document the prehistory and history of the Moose Cree in this significant cultural area.

ACKNOWLEDGEMENTS

We would like to acknowledge with thanks, the assistance of Bert Wapachee, Director of Economic Development, our guides Mr. Sinclair Trapper, Arnold Chee Choo and Eddie Trapper. Others who assisted with the work were Cecil Chabot and Chas Cachee. A special thank you to Todd Calaiezzi of Superior Helicopters Canada Inc. for taking us on a short flight over the study area.

REFERENCES

Dawson, K.C.A.

1968. An archaeological reconnaissance of the Moose Fort fur trade post of 1670 at the Moose or Prince Rupert West River, James Bay, Ontario. Settlement Surveys Ltd, New Liskeard, Ontario.

Long, John S.

1999. Hannah Bay Posts in Relation to Hannah Bay (ONR) Goose Camp: Preliminary Report. (A subsequent final report " Some Historical Sites was filed on December 30, 1999). Moose River/James Bay Coalition, Environmental Assessment Board Hearings, Ontario Hydro Demand/Supply Plan, Panel 3E2A, Panel 4B.

1986. Treaty research report: Treaty Nine (1905-1906): the James Bay Treaty. Treaties and Historical Research Centre, Indian and Northern Affairs Canada, Ottawa, Ontario.

Pollock, John W.

1986a. Ontario Hydro archaeological resources overview assessment of the Moose River drainage area with special reference to the Mattagami River Basin. Ontario Hydro, 700 University Avenue, Toronto, Ontario, M5G 1X6.

1979. "An archaeological inspection and assessment of two historical archaeological sites on the Severn River, Ontario." In *Collected Archaeological Papers*, David Skene Melvin, editor, Archaeological Research Report 13, Historical Planning and Research Branch, Ministry of Culture and Recreation (Ontario), Toronto.

Rich, E.E., editor, Johnson, HBC archivist.

1954. *Moose Fort Journals 1783-1785*. Introduction by G.P. de T. Glazebrook. The Hudson's Bay Record Society, London, England.

SUMMARY OF 1999 ARCHAEOLOGICAL INVESTIGATIONS BY D.R. POULTON & ASSOCIATES INC.

DANA R. POULTON AND CHRISTINE F. DODD

The archaeological consulting firm of D.R. Poulton & Associates Inc. is based in London and operates under the direction of Dana Poulton. In addition to three permanent staff members, 21 people were employed by the firm on a seasonal basis in 1999.

The firm conducted 53 separate archaeological resource management studies in 1999. They involved 15 separate counties and regional municipalities, from Kent and Lambton Counties eastward to Durham Regional Municipality, and from Lake Erie and Lake Ontario northward to Simcoe County and the Kawartha Lakes.

Seven of the projects were limited to Stage 1 background studies. Thirty-eight involved both Stage 1 background research and Stage 2 field survey. Five other projects consisted of Stage 3 test excavations. A further six projects involved both Stage 3 test excavation and Stage 4 salvage excavation.

Altogether, 66 archaeological sites were investigated in 1999. The inventory includes 55 previously unknown sites discovered by the firm and 11 previously known and registered sites. Of the newly-discovered sites, 33 were registered in the course of 1999 assessments conducted by the firm. The remaining 50 consisted of undiagnostic isolated find spots or late historic components which were not considered to be significant enough to register.

A Stage 2 level of assessment was conducted on 55 sites by D.R. Poulton & Associates in 1999. More extensive Stage 3 test excavations were carried out on seven sites, and full Stage 4 mitigative excavations were conducted on five.

The archaeological fieldwork carried out by the firm in 1999 encompassed a range of assessments in fulfilment of legislative requirements. These included 21 draft plans of subdivision, 12 natural gas pipeline projects, two provincial highway projects, three power plants, a municipal sanitary sewer, four hydro transmission lines, a stream channelization, a block plan, a municipal park master plan, five industrial/commercial developments and a golf course.

In preparing this summary, data were considered in an attempt to evaluate the relative success rate in discovering archaeological sites. It is difficult to evaluate the results for linear corridor surveys such as pipelines and highways as they often follow existing rights-of-way which have been disturbed to a greater or lesser degree. Accordingly, data were examined for the surveys of blocks of land such as residential

429 Wharncliffe Road South,
London, Ontario N6J 2M6

subdivisions which tend to consist of lands which retain a potential for extant archaeological remains. The results are summarized below.

In 1999, D. R. Poulton & Associates conducted 24 surveys of blocks of land totalling 334 hectares in extent. Archaeological remains were found on over half the projects (14 of the 24, or 58%). However, fully three-quarters of the projects (18 of the 24) had essentially negative results. They included 10 projects where nothing at all was found and eight projects where sites were discovered but were determined to be of insufficient significance to warrant further concern. Only six of the projects (one-quarter of the total of block surveys) resulted in the discovery of archaeological sites considered significant enough to warrant Stage 3 or 4 excavation.

One of the sites discovered in 1999 was an early 19th century homestead designated the Angus Glen site. It is located on the Bruce Creek valley in the Town of Markham. Stage 4 excavations of this site determined that it represents a log cabin or shanty with a root cellar. An analysis of the tablewares confirms that this occupation dates *circa* 1825-1835 and that it spans the transition from pearlware to whiteware in southern Ontario.

Another significant component discovered in 1999 was the Toso site. It is located on the Dingman Creek drainage in the City of London. Limited Stage 3 test excavations recovered a sample of 326 artifacts from Toso. The results indicate that it represents a prehistoric Neutral cabin site dating to within the period 1400-1550 A.D. Stage 4 salvage excavations of the Toso site are scheduled for 2002 (D.R. Poulton & Associates 1999).

The most interesting project undertaken by the firm in 1999 involved ongoing work in Victoria Park. A profile of that project is presented below.

VICTORIA PARK MASTER PLAN

As described in the Annual Archaeological Reports for 1997 and 1998, D.R. Poulton & Associates has been engaged over the past several years on a long-term study of Victoria Park in the City of London (Poulton and Sutton 1997:44-46; Poulton and Dodd 1998:62-65). This six-hectare property is located in downtown London and is the oldest public park in the municipality. The archaeological investigations are being carried out on behalf of the City of London as part of the Victoria Park Restoration Master Plan. The study is being directed by Dana Poulton and Christine Dodd.

The initial research on the park was conducted in 1995 as part of a background study: it focused on the history and condition of the park and the potential for archeological remains (Behr et al. 1995). A draft Restoration Master Plan study was then prepared: it included more in-depth research and identified a strategy for archaeological field investigations to be undertaken as part of the implementation of the master plan (Hough Stansbury Woodland Naylor Dance et al. 1997). The Stage 2 survey of the park followed in the fall of 1997: it consisted of an intensive test pitting of the property at 5-10 metre intervals. Details on the survey have been presented in the agency report on the assessment (D.R. Poulton & Associates 1998) and in a published account (Poulton and Dodd 1998).

As described in the various accounts cited above, historic research has determined that the property that now forms Victoria Park was part of the 73-acre military reserve established by the British in London immediately following the Rebellion of 1837. The property was the site of the Framed Infantry Barracks and Drill Ground. The barracks compound covered an area of some 10 acres including the entire northern two-thirds of the property. The British garrison was based in London from 1838 to 1853, when troops were withdrawn to England, and again from 1861 to 1869 during

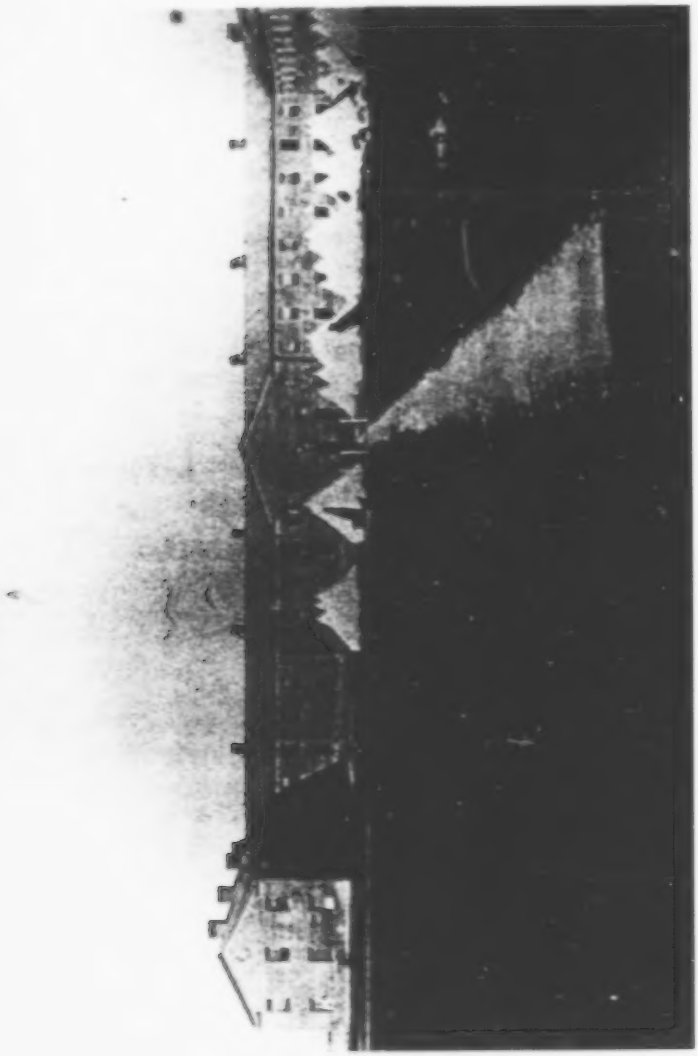


FIGURE 1. Soldier's quarters, Victoria Park, ca. 1867

the period of unrest of the Fenian Raids and the American Civil War.

Detailed plans for the Framed Infantry Barracks were laid out in a 53-page estimate approved in September, 1839 (National Archives of Canada W055/1917). This document and later plans show that the barracks complex included several dozen structures surrounded by a stockade with projecting bastions. The major buildings were centred around the parade square: it was bounded by the soldiers' quarters to the north, the officers' quarters to the south, the hospital compound to the west, and the canteen, cells, defaulters room, powder magazine and rifle magazine to the east. The complex survived until the early 1870s, when a fire destroyed the officers' quarters, and the rest of the structures were cleared in preparation for the development of Victoria Park.

Background research on Victoria Park continues to be a work in progress and 1999 saw a significant discovery: an album of photographs from the 1860s. The photographer was Ensign Albert Augustus Phipps of the 60th Rifles, whose regiment was stationed in the infantry barracks from 1865 to 1868. His album was donated to the J. J. Tallman Regional Room of the D. B. Weldon Library at the University of Western Ontario by two of his descendants: David Phipps and his sister, Penny Caceres. It contains 12 photos of the barracks and several others of London and the army camp at Komoka. The discovery of this album tripled the number of known photographs of the historic barracks. Figure 1 illustrates one of the Phipps album photos: a view of the soldier's quarters looking north across the parade ground. This 53-room structure was 300 feet long and was the largest building in the barracks. The tents in the forecourt of the building were probably temporary accommodation for a newly arrived regiment.

The most significant event in the study of Victoria Park in 1999 was the implementation of archaeological test and salvage excavations. These excavations are being scheduled as part of a four-year construction program that includes major changes to the path system, the creation of formal entrance ways to the park and other infrastructure developments. The primary focus of the 1999 fieldwork was the northwest corner of the park where a new formal entrance was planned at the corner of Clarence Street and Central Avenue.

Research showed that this corner of the park formed part of the northwest bastion of the historic barracks. Reference to contemporary plans indicated that two buildings were wholly contained within this area: a men's and women's privy constructed as part of the barracks in 1839 or 1840; and a new privy constructed to replace the first, sometime later in the 1840s. Comparable privies were located in the northeast bastion. The original plan shows that these privies had separate compartments for soldiers and women. Three other structures were located on the periphery of the proposed works: the military store; the armourer's shop; and one of the two soldiers' wash houses.

The 1999 excavations confirmed that the armourer's shop extended marginally into the zone of impact at the northwest corner. Structural remains of this building were present in the form of badly-decayed wooden sills containing a series of *in-situ* 4½ inch spikes oriented either vertically or obliquely.

No evidence of the later of the two privies was found by the excavations. It was likely situated under the turn lane from Clarence Street to Central Avenue that now forms part of the new entrance. However, any remains of this structure that might have survived earlier road construction would lie too deep to be disturbed by the new entranceway.

The main discovery of the 1999 excavations was the early privy, it was designated Feature 11. This structure was found sealed under the asphalt layer of a roadway through the park that was closed in 1951. The building had a length of 25 feet and a width of six feet. The cess pit

was six feet deep and lined with squared timbers: the upper timbers were charred, showing that the building was destroyed by fire. Salvage excavations of this feature were limited to the portions threatened by the proposed construction of wall footings for the new entranceway. Excavation revealed that most of the cess pit was filled with sterile sand following the abandonment of the privy.

Almost 5000 artifacts were recovered from the privy excavations: 856 from the exterior builders' trench; 2456 from the layer overlying the sterile fill; and 1577 from the underlying floor of the cess pit. The remains proved to be a cross-section of the material culture from the initial years of the Framed Infantry Barracks. Ceramic tablewares from the privy are dominated by industrial slipware bowls which are a common feature of the soldiers' area of the barracks. Figure 2 illustrates a tea saucer recovered from the builder's trench: it has a Davenport maker's mark and features a blue hand-painted floral pattern popular in the 1830s.

Some of the most interesting specimens from the privy consist of personal items. They include fragments of red sealing wax and a white ball clay pipe that had been notched to mark the score in a game. Also recovered were several hand-made dominos and pieces of domino scrap manufactured by the soldiers from the bones of cows or pigs. Additional material included a quantity of liquor bottles and fragments thereof. Figure 3 shows three of the bottles from the interior of the privy: the one to the right is from the artifact-rich upper layer; the other two from the floor of the cess pit. The quantity of liquor bottles and pipe fragments suggests that smoking and drinking were popular past times in the men's room.

Armaments from the privy included 11 gun flints and seven smooth-bore 0.8-ounce lead shot. Most useful for dating purposes were items of military insignia. British military headgear in

FIGURE 2. Davenport tea saucer, hand-painted blue floral pattern

FIGURE 3. "Black glass" bottles: beer (left) and wine or spirits (centre, right)

the early years of the garrison in London consisted of shakos made of felt and leather, and remains of these were recovered from the privy. The builder's trench yielded a brass shako plate of the 85th Regiment of Foot (stationed in the barracks from November 1839 to May 1840), while the floor of the privy yielded a shako plate of the 73rd Regiment of Foot (stationed in the barracks from July 1839 to June 1840).

Related items from the privy include thin brass chin strap scales. From 1816 to 1842, the style of chin straps in use for shakos featured overlapping brass scales of graduated size, sewn onto the leather strap. Several score of these were recovered from the floor of the privy, including a number of intact segments with leather and thread preserved by contact with the copper salts. An x-ray of the longest section, recovered from the floor of the privy, is shown in Figure 4: it has a length of 18 cm and represents roughly one-half of a complete chin strap assembly.

Our understanding of the Feature 11 privy is limited somewhat by the fact that the excavations were confined to portions of the feature that were threatened by the proposed construction. In consequence, the excavations were restricted to a portion of the structure, interpreted as the men's compartment, and did not include the western quarter of the structure which is believed to have contained the women's compartment.

Further archival research may pinpoint the exact period of time spanned by the use of the privy. For the present, it may be stated that it

FIGURE 4. X-ray of section of brass chin strap scales (length, 18 centimetres) (courtesy of Dr. Andrew Nelson, University of Western Ontario)

was still in use as of April 1841 as it is illustrated in a plan of that date. A preliminary analysis of the artifacts tends to suggest that the privy may have been destroyed as early as 1842. Regardless of the specifics, this feature is a time capsule from the first few years of the occupation of the Framed Infantry Barracks in Victoria Park.

REFERENCES

Behr, S., A. Hannay, M. Pascoe, D. Poulton, M. Borland and K. Pratt
1995. Victoria Park Inventory and Condition Report: Historic and Contemporary. Report on file, City of London.

Hough Stansbury Woodland Naylor Dance Limited et al.
1997. Victoria Park Restoration Master Plan. Prepared by Hough Stansbury Woodland Naylor Dance Limited, Jack B. Ellis and Associates, and D.R. Poulton & Associates Inc. Draft report on file, City of London.

Poulton, Dana R. and Christine F. Dodd
1998. "The Archaeological Investigations of Victoria Park, City of London, Ontario." In *KEWA* 98-3: 2-23. March 1998.

Poulton, Dana R. and Richard E. Sutton
1997. "Summary of 1996 Consulting Activities of D.R. Poulton & Associates Inc." *Eighth Annual Archaeological Report of Ontario, New Series:* 44-50. Ontario Heritage Foundation.

Poulton, Dana R. and Christine F. Dodd
1998. "Summary of 1997 Archaeological Investigations by D.R. Poulton & Associates Inc." *Ninth Annual Archaeological Report of Ontario, New Series:* 62-70. Ontario Heritage Foundation.

D.R. Poulton & Associates Inc.
1998. The Stage 1-2 Archaeological Assessment of Victoria Park, City of London, Ontario. September, 1998. Prepared by Dana Poulton and Christine Dodd. On file, City of London and the Ministry of Tourism, Culture and Recreation.

1999. The 1999 Stage 1-3 Archaeological Assessment of the Toso Property, By-Law No. Z-1-99696, City of London, Ontario. Prepared by Shari L. Prowse, Christine F. Dodd and Dana Poulton. On file, Ministry of Tourism, Culture and Recreation.

FIELD SCHOOLS:
CATARAQUI ARCHAEOLOGICAL RESEARCH FOUNDATION 1999 FIELD SCHOOL

SUSAN M. BAZELY

The Cataraqui Archaeological Research Foundation continues to offer the "Can You Dig It?" summer archaeology camp to students of all ages to fulfil part of its education mandate. The second season of excavation on the site of the Naval Cottages at the Royal Military College of Canada (RMC) on Point Frederick, was conducted as part of this ongoing program. Archival research and excavations during the summer of 1998 raised several questions about the occupation of the cottages during certain portions of the 19th century prior to the establishment of RMC in 1876. More information on the effect of the fire, further construction details and evidence of occupation during all periods was also sought. It is with these requirements for information that further excavations were conducted in 1999.

THE NAVAL COTTAGES SITE

The two and a half storey row of sixteen stone cottages was constructed in 1822 for the Naval Dockyard shipwrights. It is obvious from historical plans, illustrations and photographs, that once erected, the Naval Cottages had an imposing presence on Kingston's waterfront. It is not at all clear, however, who was living in the Naval Cottages during the 1830s, but it seems likely that the original occupants, shipwrights, would still be present at the dockyard. By 1834, some of the cottages were being rented out, but it is not known to whom. The Naval Dockyard was closed and re-opened a number of times between the 1840s and 1860s. It is highly unlikely that shipwrights were required during this latter period in the numbers that would have existed during the heyday of the dockyard.

It is not until 1868 that a clear picture emerges of who was inhabiting the cottages. The well documented fire of August 30th indicates that all occupants were in the Royal Canadian Rifles and lived with their families in one of the four rooms of each cottage. A Board of Inquiry determined that the fire must have been caused by someone cooking, contrary to orders, in their barrack rooms. The seven damaged cottages (10-16) were left standing and roofless until 1875 when they were finally torn down.

The new and badly needed military college was to be located at the former Naval Dockyard and a survey was conducted in 1874 to determine the state of all existing buildings. The remaining cottages (1-9) were required to have repairs made necessary for habitation. This suggests that they were empty from 1870 on,

370 King Street West
Kingston, ON
K7L 2X4

when the British military began handing over facilities and responsibilities. The surviving nine cottages were subsequently to be occupied by servants and civil subordinate staff. It is not known at exactly what date they were finally abandoned, but the stone cottages were sold at auction for $110 and torn down in 1910. A more detailed summary of the history of the occupation of Point Frederick can be found in Bazely (2000).

The Archaeology of the Naval Cottages

Three units from 1998 were re-opened as they had not been completed at the end of the season and it was felt that additional information could be ascertained. All of these were located around the perimeter of Cottage No. 16 so data would be related to construction. An additional three units were placed within Cottage No. 16, two being located in the south room and one in the north. One unit was placed at the perimeter and to the south exterior of Cottage No. 16. Five new units were opened in and around Cottage No. 15. Two were placed along the perimeter, one within the south room, one in the north room, and one in the central hallway. Both Cottages No. 15 and 16 were destroyed by the 1868 fire.

Again a relatively dry winter and spring provided "crop marks" showing the location of individual rooms and fireplaces where the foundation walls were located close to the surface. Nine of the excavation units contained structural elements, while only six contained evidence of the fire in the form of ash, charcoal, burnt artifacts and demolition rubble. All units contained burnt or melted artifacts. Builders' trenches for the east and south wall of Cottage No. 16, and east and west walls of Cottage No. 15 were encountered. Square construction features consisting of stone chips were identified in the southwest and northeast corners of Cottage No. 16 and the northwest corner of Cottage No. 15. A small section of the south wall of Cottage No. 16 was uncovered, while small sections of both the east and west walls of Cottage No. 15 were identified. A larger section of the north wall of Cottage No. 15 and fireplace were also located.

Three large pits approximately 4 metres across were identified in the centre portion of each cottage room. These contained post-fire debris including what appeared to be collapse and subsequent demolition deposits. From the placement of various excavation units it was determined that the underlying clay sloped in towards the centre of the cottages, which may represent basement depressions. It was also evident that the central hallway walls in each cottage were supported by stone piers and not continuous walls. Two of these piers were encountered in Cottage No. 15 and measured 50cm square. A third was excavated in 1998, but not interpreted as such. It would seem that the ground floor was raised somewhat above existing grade to provide for at least a shallow basement.

The variety of artifacts illustrate an occupation of a domestic nature rather than military. Sections of stove were recovered from the most southerly debris pit including a claw foot, pipe sections and side panels. The maker was "J. Van Norman U.C". Although much of the ceramic assemblage was burnt it represents the early to mid 19th century and includes creamware, hand-painted and green- edged pearlware, coarse red earthenware, refined stoneware, and refined white earthenware. Personal items include clay smoking pipes, shell, bone and metal buttons, clay marbles, brass jew's harp and a straight razor. A Sir Isaac Brock token dating to the War of 1812 was recovered from the northwest corner of Cottage No. 15 supporting the theory of the previous excavation season. Four tokens were recovered in 1998, two commemorating Arthur Wellesley, the Duke of Wellington and his success at the Battle of Waterloo and two recognizing the 'Hero of Upper Canada', Sir Isaac

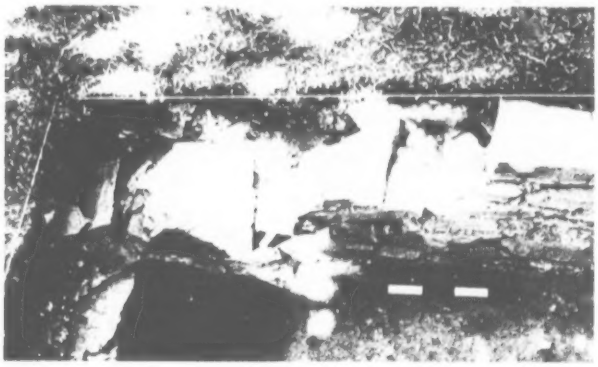


FIGURE 1. Square construction feature in 6Q at northwest corner of Cottage No. 15, with west and north walls and fireplace

FIGURE 2. Southwest stone pier of Cottage No. 15 in 6S and west edge of debris pit at right

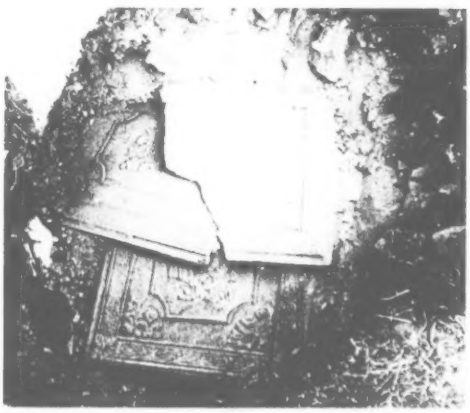


FIGURE 3. Stove parts from 6R in debris pit in Cottage No. 16 prior to removal

FIGURE 4. "Can You Dig It?" participant uncovering remains of the Naval Cottages

Brock and his heroism during the War of 1812. Three of these were found in close association with a wall, suggesting either loss or intentional placement during construction; the fourth was found in a pile of dirt that predates the fire, possibly related to the original excavation for the foundation. Large amounts of butchered bone, bottle glass (mostly melted) and building and structural hardware were recovered. These included nails, hinges, keys and locks.

Military presence is represented by three 74th Regiment pewter buttons. This regiment served in Canada from 1841 to 1845, but was never stationed in Kingston. It is possible that a soldier of the 74th joined the Royal Canadian Rifles who were barracked in the Naval Cottages. One 41st Regiment of Foot silver-plated button was also recovered. The 41st was in Kingston during the War of 1812, but left Canada in 1815. It is unclear why this regimental button should be associated with the fire debris.

Almost 9,000 artifacts of considerable variety were recovered during the second season of excavation at the Naval Cottages. All fit the time period of occupation of the site and no late 19th century material was found within the occupation layers of the site. Both Cottage No. 15 and 16 have now been investigated and further structural information was collected. There are still some questions and more detailed analysis of the data is warranted, but no further investigations of the Naval Cottages Site are currently proposed.

ACKNOWLEDGEMENTS

This project could not have been undertaken without the co-operation, effort and input of several individuals. Mr. Ross McKenzie, curator of the RMC Museum assisted with the overall co-ordination of the program and acted as liaison with the RMC administration. Jonathan and Michelle Moore conducted all archival research in both Ottawa and Kingston. They turned up a variety of resources which became indispensable to the project and the program. Michelle also completed the artifact inventory and preliminary analysis. Heather Crow's research provided the project with important geophysical data. Thanks to the instructors Michelle Moore and Mike Painter-Main, and to the 54 participants of the 1999 "Can You Dig It?"Program who contributed their labours to learning about and finding out more about the Naval Cottages and Dockyard at Kingston.

REFERENCES

Bazely, Susan M.
2000. "Field Schools Cataraqui Archaeological Research Foundation: The Naval Cottages Site." *Annual Archaeological Report, Ontario 1999*, Vol. 10.

1999. "The Naval Dockyard Cottages at Kingston: The History of 170 Years through Archaeology." In *A Collection of Talks 1999*. Pittsburgh Township Historical Society.

Crow, Heather
1998. Ground Penetrating Radar Used in Archaeological Investigation of a Kingston Historical Site. Department of Geological Sciences, Queen's University, Kingston, Ontario.

TRENT UNIVERSITY FIELD SCHOOL AT THE BARK SITE (BBGP-12)

SUSAN M. JAMIESON

INTRODUCTION

The Bark site is located 12 kilometers due west of the City of Peterborough. It was surface collected, tested, and mapped in 1983 by Dr. Mima Kapches and again in 1986 and 1987 by Dr. Rick Sutton. In May and June of 1997, 1999, and 2000, Dr. Susan Jamieson began a program of research at the site in conjunction with Trent University's field school in Ontario archaeology. Research goals,broadly defined, were to add to our scant knowledge of the archaeology of the middle Trent Valley.

Following from his own research as well as that of Kapches (1983), Sutton (1990:25,27,46-50) concluded that the site was a single component mid 15th century Huron village that was occupied year-round, extended over slightly less than a hectare, and had its greatest similarity with sites from the Balsam Lake area in the upper Trent Valley.

The Bark site is nestled in a hollow, sheltered by drumlins from prevailing northerly and westerly winds, warmed from the south by the sun, and situated in proximity to a variety of resource rich ecosystems. Nearby artesian springs would have provided potable water and local soils would have produced good crops of corn (Gillespie and Acton 1981:22).

The site's positioning relative to local topography (Chapman and Putnam 1973:280) and environment is very similar to that of other Early through Late Ontario Iroquois sites in the middle Trent Valley: for example, the Early and Late Iroquois Richardson site, at the eastern end of Rice Lake; the Middle Ontario Iroquois Wilson site, less than 1 km to the east of Bark; and the Middle Ontario Iroquois Quackenbush site (which might, in fact, be Algonkian), southeast of Stony Lake. Analyses have confirmed that Richardson and Wilson populations, like those at Bark, made use of a variety of flora and fauna from "a diversified local environment filled with many different habitats" (Pearce 1977:14; Sutton 1990:37).

When the Bark site was occupied, the climate differed little from that of today (Sutton 1990:8). Sutton's (1990:24-25) analysis of floral remains from Bark confirm that a variety of wild edible and medicinal plant species were collected from "open and/or disturbed areas". He further confirms that "there were large areas of secondary growth", mature "deciduous forest growth", cedar, and "mixed hardwood and coniferous forests" in the area.

Sutton (1990:19-22) concluded that the site's faunal remains include fish species primarily available in nearby Jackson Creek or the

Department of Anthropology
Trent University
Peterborough, ON K9J 7B8

Pigeon River, 7 kilometers to the west; mammals from a diversity of local environments such as "swamps, wetlands, forest edges and disturbed or agricultural areas, ...semi-open woodland and mixed coniferous-deciduous forests"; birds from deciduous forests and "wetlands, bays, lakes and rivers"; freshwater mussels from Jackson Creek, and turtle from nearby "ponds, wetlands and streams". That is,those econiches most heavily used by the site's inhabitants "appear to have been [local] areas of secondary growth, wetlands, swamp and creek areas, and forest/field edges" (Sutton 1990:27).

Settlement Patterns

Trent's excavations have confirmed that there are essentially three main cultural levels to the site. Strata I and II are arbitratrily defined owing to plough-induced destruction and mixing. The uppermost layer is a sod level containing late 19th and early 20th century European artifacts, late 16th or early 17th century Algonkian or Iroquoian artifacts, and 15th century aboriginal artifacts. The underlying Stratum II is the plough zone continuation of Stratum I, formed through repeated working of the soil during the 19th and 20th centuries. This has modified and/or destroyed the contexts and features of 15th century aboriginal use. Artifacts recovered from this layer relate to a late Pickering occupation, the 15th century village, and to 19th and 20th century agricultural use of the site. Stratum III is an occupation and destruction layer in which 15th century and late Pickering settlement patterns occur in situ.

The Pickering component is represented by leached-out post moulds which contrast with the darker and more obviously organic 15th century remains. On the basis of clear association or stylistic diagnostics,only a small number of artifacts can be assigned to this component. Other artifacts (principally flaking debris) may be of Pickering origin,but lack diagnostics which permit them to be sorted from the later materials with which they are intermixed.

To date, a plethora of overlapped features and postmoulds has been excavated, indicating extensive rebuilding of the 15th century component. These have been truncated at the ploughzone/subsoil interface. Most of these postmoulds and associated pits and hearths represent features whose interrelationships will be clarified only after additional on- site research is conducted. At this point, we have portions of at least six 15th century longhouses and one wall of a more temporary structure. Two of the longhouses are 7.5 metres wide; their lengths have yet to be determined. Hearths are centrally placed and surrounded by ash pits and post moulds suggestive of racks. At least one structure contains a bench line and large storage pits. Parts of the 15th century houses are superimposed upon one another and overlie at least one, possibly two, Pickering houses. Structure orientations are variable.

Pickering Artifacts

A small number of pipe sherds and a single edge retouched tool, described by Jamieson (1998:75) are the only artifacts definitely assignable to this component.

Middle Trent Valley Iroquois Artifacts

Of the 357 sherds analyzed to date which constitute the assemblage of 15th century vessel rims, only 45 can be considered analyzable following Sutton's criteria (1990:12). The majority of rims have incised or stamped single or opposed motifs on their collars and necks. Most shoulder sherds are decorated and most body sherds are plain. Sherds from appliqué strap handles may reflect a Saint Lawrence Iroquoian presence at the site (Emerson 1954:83). Pipe bowl and stem sherds represent a minimum of 23 pipes. The conical flared form dominates, followed by barrel, trumpet, and vasiform bowl shapes. Seven pipes are decorated, 16 are plain. According to Roger Perkins (personal commu-

nication, 1999), of the Native American Travelling College, smoking pipe ownership and use is very complex; however, plain pipes are for communal use, decorated pipes for personal use. Analogy therefore suggests that the majority of smoking pipes were for communal rather than personal use. The careful decoration typical of Saint Lawrence Iroquoian ceramics (Jamieson 1990:392) is evident on one trumpet pipe.

The lithic assemblage includes flaking debris and a limited array of finished tool types. Following Leaf (1979), there is a suggestion that variation in bipolar core form represents successive reduction stages (cf. Binford and Quimby 1963:286- 303). The most common toolstone in the Trent University sample is Upper Bobcaygeon Chert, which could have been procured from local outcrops and tills. Onondaga chert, from the Niagara Peninsula or adjacent areas of New York State, is the second most common toolstone, followed by chloride schist and Upper Gull River Chert. Chloride schist occurs in local tills; it also may have been quarried to the north and east of the Kawartha Lakes at the southern margin of the Canadian Shield. Outcrops of Upper Gull River Chert are known from the Waubaushene/Coldwater area of northern Simcoe County (Eley and von Bitter 1989:27). The frequencies of primary versus secondary flakes indicate that Upper Gull River Chert, chloride schist and Onondaga Chert were more intensively reduced, hence curated to a greater degree, than was Upper Bobcaygeon Chert, a pattern consistent with greater procurement effort and/or cost. Core and shatter toolstone types further support this pattern and its interpretation. Upper Gull River, Bobcaygeon, and Onondaga Cherts were preferred for the more formal tools.

Associated diagnostic artifacts confirm that the faunal sample is from the 15th century component or is of recent derivation. Mammal remains dominate, followed by fish and Pelecypod (fresh water mussel) shell pieces. As most of these remains are in a highly fragmented condition, relatively few individuals are represented. The assemblage also contains a small number of bird, amphibian, and reptile bones, and pieces of snail shell. This pattern contrasts sharply with Sutton's (1990:19) findings, and can be explained by differing recovery procedures and the site areas that were sampled. For example, unit S54E10, which contained a hearth, produced over one-half of the 1999 faunal sample. This included at least one groundhog, muskrat, and candid, in addition to bird bone. The majority of the remaining faunal specimens came from pits or other features which extended cultural deposits damaged by ploughing.

Floral specimens, all from 15th century contexts, include a section of one sunflower seed, two corn kernals and one cob fragment, and two small butternut shell fragments. Corn kernal dimensions (W/T ratio of 1.5:1, L/W ratio of 1:1) and crescent shape confirm that they are Eastern Eight Row maize (Monckton 1992:30; Pearsell 1980). Consistent with Sutton's findings, wood charcoal includes pine, oak, birch, and elm.

After scrutiny of the site environs, Chief Wendall Froman (personal communication) is of the opinion that it was widely known as a place of good soil where crops could be grown in a time of famine (the area to the west and south of the site is fairly low-lying and moist). Consequently, Chief Froman believes that the site was used by numerous peoples as a place of temporary refuge when food resources failed elsewhere. This interpretation is consistent with Sutton's (1990:27) conclusion that the site was not situated for defense.

European Artifacts

Items in this category all date from after ca. 1870 A.D. These include wire nails, machine-made metal washers, a cut tack with a machine-made head, a tin heart-shaped tobacco seal, one

lipped tin container lid, a single dose medicine vial, a plastic barrette, and a crimped crown cap.

Site Functions and Dating

A tentative date of mid-12th through 13th century A.D. is assigned to the Pickering component based on linear push-pull pipe bowl decoration (Kenyon 1968:113, Plate 32) and a punctated rim sherd (Wright and Anderson 1969:103, Plate XI, specimens a and b) illustrated by Sutton (1990:73 [Plate 3, number 7). Associated materials datable by the radiocarbon method and/or a larger sample of temporally diagnostic artifacts from this component will be required to refine this estimate. The very limited settlement and artifactual data available at this time suggests that the earliest occupation was a small, late Pickering hamlet which contributed to the areas of secondary growth favoured by subsequent site occupants. As there are no associated floral or faunal materials, the economic base of this hamlet remains a matter of conjecture.

For the 15th century component, we have a single calibrated wood charcoal date of A.D. 1420+/-35 (Sutton 1990:25). Seriation of the overall assemblage dates the occupation to the mid-15th century (Sutton 1990:27). Ceramic vessel attributes cluster most closely with those from the late 15th century Hardrock site (Sutton 1990:50), traditionally viewed as "an expression of a St. Lawrence Iroquois expansion up the Trent Valley" (Ramsden 1977:70, citing Emerson 1954), but more recently questioned as perhaps being Algonkian (Lisa Rankin, personal communication 1998). The Bark site ceramic sample contains both middle Trent Valley and Saint Lawrence Iroquois ceramics. Occupied on a year-round basis, the village's inhabitants were agriculturalists who supplemented their crops with collected foods, hunting, and fishing.

In 1998, a stemmed eared triangular iron projectile point was recovered from the Bark site. Fitzgerald (1990:34,481-484) states that this point type was used by both Algonkian and Huron groups during the late 16th and early 17th centuries. While this specimen does not necessarily signal the presence of an actual occupation, it does indicate use of the area during this time.

The site's remaining artifacts date from the late 19th or 20th centuries. The region had been settled by Europeans in the early 19th century and within a relatively short period was being intensively farmed by them (Historical Atlas of Northumberland and Durham Counties 1972:vi-vii). Artifact types are consistent with European agricultural use of the site area.

Conclusions

The preliminary results of the Trent University investigations have shown that the history of the Bark site is far more complex than previously thought and there is much work to be done to delimit and define its various occupations. Will more detailed analysis lead us to the realization that this was a mixed Algonkian-Iroquoian settlement during the 15th century, or will we conclude that it was a predominantly Iroquoian village? What of the conclusion that this location in the middle Trent Valley was widely known as a place to frequent during hard times? Does this fit comfortably into current settlement models?

Acknowledgements

I acknowledge, with gratitude, the assistance and cooperation of Joan and Don Bark, which greatly facilitated the fieldwork. Special appreciation is extended to Chief Kris Nahrgang, Chief Wendall Froman, Dr. Mima Kapches, Curtis Lazore, Megan Springate, Marilyn Baker, Sandra Atkins, and Roger Perkins. I would like to thank all of the 1997, 1999, and 2000 field-school participants for their hard work. The research component was funded through the Office of the Dean of Arts and Science, Trent

University, and the educational component of the fieldschool was enhanced through a Trent University Academic Innovation Fund award to the author. David Cruz completed the 1997 faunal analysis.

REFERENCES

1972. *Historical Atlas of Northumberland and Durham Counties.* Facsimilie of 1878 H. Belden and Company edition. Mika Screening, Belleville, Ontario.

Binford, L.R., and G.I. Quimby
1963. "Indian Sites and Chipped Stone Materials in the Northern Lake Michigan Area." Fieldiana: *Anthropology 36(12)*:277-307.

Chapman, L.J., and D.F. Putnam
1973. *The Physiography of Southern Ontario (2nd edition).* The University of Toronto Press, Toronto.

Eley, Betty, and Peter H. von Bitter
1989. *Cherts of Southern Ontario.* Royal Ontario Museum, Toronto.

Emerson, John Norman
1954. The Archaeology of the Ontario Iroquois. Unpublished Ph.D. Dissertation, Department of Archaeology, University of Chicago, Chicago,Illinois.

Fitzgerald, William R.
1990. Chronology to Cultural Process: Lower Great Lakes Archaeology,1500-1650. Unpublished Ph.D. dissertation, Department of Anthropology, McGill University, Montreal.

Gillespie, John E., and C. J. Acton
1981. *Soils of Peterborough County, Ontario. Soil Survey Report 45*,.Ontario Institute of Pedology. University of Guelph, Guelph.

Kenyon, Walter
1968. *The Miller Site.* Occasional Paper 14, Art and Archaeology, Royal Ontario Museum, Toronto.

Leaf, Gary R.
1977. "Variation in the Form of Bipolar Cores." *Plains Anthropologist* 1979 24(83):39-50.

Jamieson, James Bruce
1990. "The Archaeology of the St. Lawrence Iroquoians." In *The Archaeology of Southern Ontario to A.D. 1650*, Chris J. Ellis and Neal Ferris, eds.,pp. 385-404. Occasional Publication No. 5, London Chapter of the Ontario Archaeological Society, London, Ontario.

Jamieson, Susan
1998. "The 1997 Trent University Fieldschool at the Bark Site (BbGp-12),Peterborough County." *Annual Archaeological Report, Ontario,* vol. 9:74-77, Dena Doroszenko, ed. The Ontario Heritage Foundation, Toronto.

Kapches, Mima
1983. Report on the Bark Site, Cavan Township, Peterborough County. Report on Activities Conducted Under Archaeological Licence 83-05 on file, Ministry of Citizenship, Culture and Recreation, Toronto.

Monckton, Stephen G.
1992. *Huron Paleoethnobotany.* The Ontario Heritage Foundation, Toronto.

Pearce, Robert James
1977. An Eastern Regional Expression of the Pickering Branch. Unpublished Master's Thesis, Department of Anthropology, Trent University, Peterborough, Ontario.

Pearsell, D.M.
1980. "Analysis of an Archaeological Maize Cache from Manabi province, Ecuador." *Economic Botany* 34(4):344-351.

Ramsden, Peter George
1977. *A Refinement of Some Aspects of Huron Ceramic Analysis.* Archaeological Survey of Canada Paper No. 63, National Museum of Man Mercury Series. National Museums of Canada, Ottawa.

Sutton, Richard E.
1990. *Hidden Amidst the Hills: Middle and Late Iroquoian Occupations in the Middle Trent Valley.* Occasional papers in Northeastern Archaeology No. 3. Copetown Press, Dundas, Ontario.

Wright, J.V., and J.E. Anderson
1969. *The Bennett Site.* National Museums of Canada Bulletin 229, Ottawa.

SUMMER AT THE BEACH: 1999 EXCAVATIONS AT THE ASHBRIDGE ESTATE, AjGt-1

MARTHA A. LATTA

During May and June, 26 undergraduate students participated in an archaeological field school carried out through an ongoing partnership between the University of Toronto and the Ontario Heritage Foundation. During the six-week project, they experienced a wide range of archaeological contexts and artifacts at the Ashbridge Site, AjGt-1.

Continuing the excavations begun in summer 1998, students explored areas of the site which had been identified as the remains of two former Ashbridge family residences: the 1809 frame house, clearly represented by its extant foundation line, and an earlier (*circa* 1794) log cabin which was attested by family tradition but otherwise completely demolished.

The 1999 excavation was designed to complete excavation of the log cabin area. Specific questions raised or incompletely answered by the 1998 fieldwork included: the extent and structure of the log cabin itself, of the adjacent cold cellar, of outbuildings, and of a porch. In the context of these questions, two wells were discovered and explored. Particular attention was given to the question of pre-contact aboriginal occupation on the property.

Department of Anthropology
University of Toronto at Scarborough
1265 Military Trail
Scarborough, ON M1C 1A4

LOG CABIN

Fragments of plaster, some still bearing traces of paint or scraps of wallpaper, marked the cabin's walls (Figure 1). No intact logs or floor members were found, and we assume most of these to have been salvaged during the demolition process.

A fieldstone feature situated at the north edge of the cabin location was excavated in 1998 and tentatively identified as the remains of a hearth with a brick chimney. It consisted of roughly trimmed stones stacked to form a low wall. Unfortunately, the 1999 excavations showed that this feature was less extensive and less well defined than previously supposed. Stones on one face of the feature appear to be

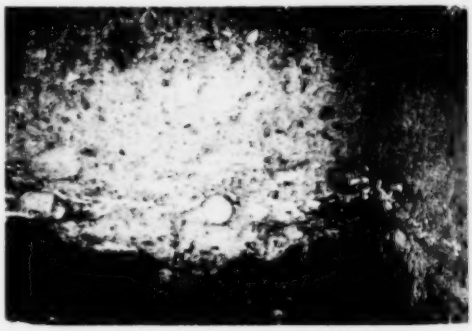


FIGURE 1. Layer of plaster ruble representing demolition of a cabin wall

trimmed, but otherwise it is an irregular stack of stone without obvious function.

As in 1998, the area of the cabin and adjacent cold cellar produced a large quantity of early 19th century ceramics. Pearlware made up more than 70% of the assemblage. Early blue and green edged wares and early palette hand-painted wares were mixed with later sponge and moulded granite-type wares. Transfers include patterns showing 'Scenes of England' and 'English Cathedrals'.

FIGURE 1. Excavation in the cellar area

COLD CELLAR

Immediately adjacent to the log cabin on the east was a subterranean cold cellar. The cellar, identified in early excavations, measures approximately 6 metres north-south and 3 metres east-west, and the cellar pit was completely excavated to a depth of 1.9-2.0 meters below surrounding surface level; Figure 2 shows the trench cutting through the cellar with a tall student in the foreground, standing on the cellar floor, for reference. The walls and floor of the pit were composed of earth, but traces of wood suggest that there may have been wooden flooring over at least part of the cellar.

A dressed log was found paralleling the north side of the cellar pit at a depth of 60 centimeters, and a second log was found on the south side. These are presumed to be structural remnants of the cold cellar's north and south walls.

As previously noted, the cellar had been filled with layers of cultural and non-cultural soils which created a sequence of more than twenty distinct strata. Within the cellar, the lowest layer contained masses of very complete artifacts: large pieces of earthenware crocks and so forth.

The floor of the cellar was broken by a brick-lined well or cistern, measuring approximately one meter in diameter. It had been filled with debris and covered by the cellar pit fill. Our hopes to find artifacts representing the earliest periods of site occupation were not realized; the fill proved to be primarily brick and wood fragments. The unusual location of the well inside the cold cellar may represent a later expansion of the upper portion of the well; alternatively well construction may have taken advantage of the lowered surface of an existing cold cellar in order to minimize efforts to reach the water table.

In either case, the well was capped with a now-vanished cover and then buried under nearly two meters of 19th century refuse and fill.

SECOND WELL

A second well was encountered at the west end of the log cabin area, adjacent to the stream cut which winds through the centre of the site.

Like the first well, this structure was brick lined and presumably covered by a now-vanished wooden cap. Unlike the first well, this structure had not been filled with debris. The well measured almost exactly one meter in diameter and 5.8 meters in total depth; it contained 3.7 meters of water. The presence of an iron screw-pump mechanism shows that this well remained in use until comparatively recent times.

Porch and Outbuildings

Outbuildings at the west end of the site, between the log cabin and the second well,

FIGURE 4. Handpainted pearlware tea bowl

were recognized by square post-moulds, often containing partially intact wooden posts.

A cluster of posts, accompanied by a high concentration of artifacts, represents the remains of a partially-enclosed porch which appears in early drawings and photographs of the 1809 house. Among the artifacts were a large number of pins, needles, safety pins and thimbles, together with half of a ladies spectacles; probably a sewing basket overturned.

Aboriginal Occupation

Aboriginal artifacts include two points (one triangular, one corner-notched broad), one chipped drill, one chipped bifacial scraper and 13 fragments of detritus, as well as a ground celt and two whetstones. The ten ceramic sherds were predominantly cord malleated; rims showed the diagnostic exterior boss of Pickering Tradition ceramics. Surprising in this collection were two worked fragments of European trade brass - a perforated rectangular pendant and a right-angle scraper; both reflect 17th century Iroquoian metalworking technology. While some of these may be rejects from a documented collection, the small, undiagnostic ceramic sherds and lithic detritus represent an in situ deposit. A hearth, recognized in 1998, was completely explored but no further settlement patterns were identified.

We hope to return for another season at the Ashbridges Site. Thanks to the Ontario Heritage Foundation and the University of Toronto at Scarborough for making this opportunity possible.

The Bare Essentials - a Tent, a Cookhouse and a Latrine: Wilfrid Laurier Archaeological Field School at Discovery Harbour

John R. Triggs

Background to the 1999 Season

The 1999 field season at Discovery Harbour, formerly the Historic Naval and Military Establishments at Penetanguishene, was directed towards the investigation of three military structures built between 1828 and 1832. The project, conducted under the auspices of Wilfrid Laurier University in partnership with Huronia Historical Parks, represents a continuation of the archaeological field school in operation since 1991. This year nineteen students were involved in the investigation of three areas/structures (Figure 1). The immediate objectives of the 1999 season were to continue previous investigations of a cookhouse examined in 1998 (Triggs 2000), examine an area to the north of the Children's centre, and to locate a latrine associated with the stone Soldiers' Barracks. As with previous excavations the secondary project objective was to assess the degree of disturbance to the archaeological resources at the Military Establishment occasioned as a result of the extensive and largely undocumented excavations carried out by Wilfrid Jury from 1952 to 1969 (Triggs 2000).

The historic site of Discovery Harbour is owned and operated by the Government of Ontario. The property was formerly known as the Military Establishment from 1828-1856. In total the property consists of 35 acres of which approximately 10-15 acres comprise the former Military Establishment; the remainder includes the area formerly occupied by the Naval Establishment (located at the south end of the property) from 1817-1829. Discovery Harbour is situated on Lots 122, 123 and 125, Concession 1, Tay Township, Simcoe County, Ontario. The field school excavation area is situated at the north end of the Penetanguishene peninsula bordered on the north by Georgian Bay, on the west by Penetanguishene Harbour and on the east by an asphalt parking lot. Today all structures in the area are reconstructed buildings with the exception of the Officers' Quarters, a stone building constructed by the Royal Engineers between 1831 and 1836.

A total of 24 units comprising 54 square metres were excavated in the military end of the site in 1999. A site plan (Figure 1) shows the location of general excavation areas referred to in the text: the tent encampment (located to the north of the Children's centre), the temporary cookhouse, and the latrine for the stone Soldiers' Barracks.

247 Willow Avenue
Toronto, Ontario
M4E 3K6

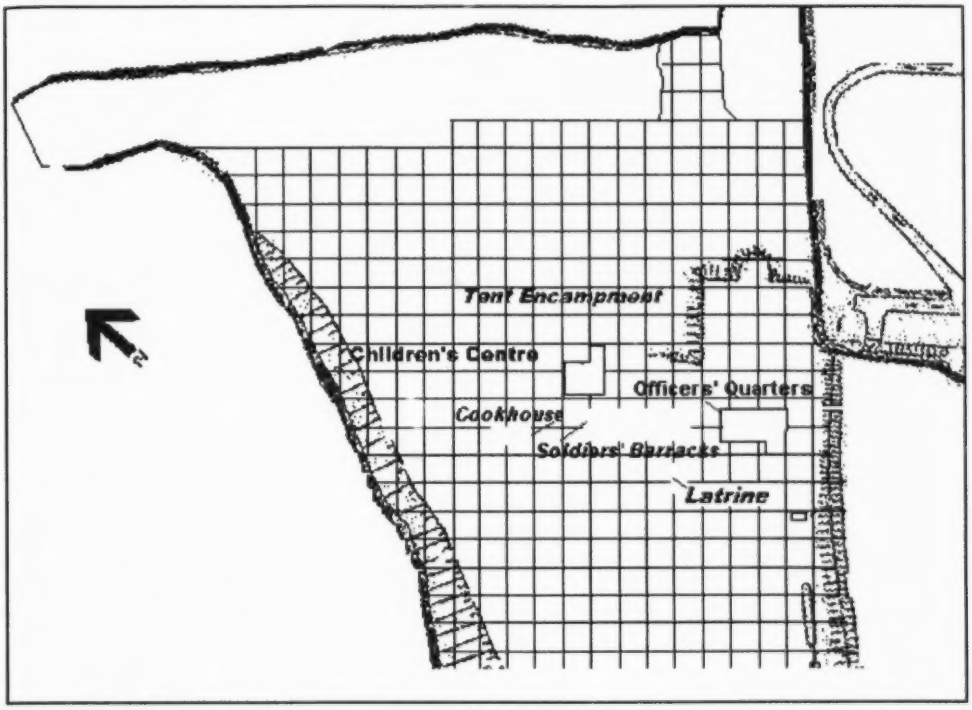


FIGURE 1. Plan of the Military Establishment (north end) showing areas/structures investigated in 1999: tent encampment, cookhouse and latrine. The Officers' Quarters and the Childrens' Centre are the only extant buildings.

THE TENT ENCAMPMENT

Excavation in the area to the north of the Children's Centre was carried out to investigate a structure identified by Wilfrid Jury as the 'log Soldiers' Barracks' (Jury and Jury 1959). According to Jury's interpretation of the archaeological evidence (none survives today to be re- examined) this was the location of the first Soldiers' Barracks to have been constructed at the Military Establishment, between 1830 and 1832. Although no such building is indicated on any of the plans so far examined, the presence of architectural remains presumably served as Jury's inspiration for the reconstruction of the barracks, today referred to as the Children's Centre. The dubious nature of the evidence, however, prompted a re-evaluation of the area.

A total of 12 excavation units covering 24 square metres were laid in to provide a cross-section through the general area. As many as 47 separate phases of occupation were identified representing the past 180 years of occupation. These have been grouped into 7 periods of which the most significant occupations are summarized below.

TENT ENCAMPMENT:

The earliest evidence for a 'structure' was in the form of three isolated limestone slabs and granite cobbles the surfaces of which were approximately level despite their physical separation.

The stones appear to be structural and may have acted as supports for timbers/floorboards. Overlying these was a layer composed of burnt wood fragments and charcoal lying within the sandy subsoil across the entire unit. Possible evidence for a burnt sleeper together with charred wood fragments may represent the remains of actual floorboards although the charred remains are discontinuous and scattered. Overlying these features was a deposit of black sandy loam. This may represent a walking/living surface although the deposit occurs on top of the floor features described above. Nonetheless, the small size and relative paucity of artifacts recovered from the deposit (small fragments of ceramic, wine bottle glass, pipe bowl fragments and bone), suggest an accumulation of debris on a compact floor deposit on the interior of a 'structure'.

The specific type of structure is further suggested by an accumulation of ash and charcoal layers in a localized area flanked by two large granite cobbles. In the absence of other large stones the feature is clearly not a fireplace, but may instead represent a support for a 'portable' stove of the kind that were used on expeditions in the 19th century. In its entirety the evidence suggests a structure although probably of a temporary nature - possibly a field tent accommodation for soldiers or officers. Tents of various sizes and types were a part of military field camp equipage and although no such structures have been described in archaeological literature in Ontario in association with early 19th century British military sites, evidence of field tents have been documented during the various excavations at Valley Forge (Parrington et al. 1984).

THE MIDDEN:

Overlying the above layers are two deposits, one of which consists of greasy black sandy loam and another characterised by a high percentage of cut limestone flakes ranging in size from 5 centimetres squared to 35 centimetres squared. Both deposits appear to be intermingled and there was some difficulty distinguishing between the two during excavation. Artifacts within the black midden deposit consist mostly of large pieces of animal bone representing hundreds of separate elements, along with ceramics, container glass, smoking pipes, and several military regimental buttons. Conspicuously absent are artifacts associated with building destruction such as nails and window glass. Instead, the predominance of cut stone in the absence of other architectural debris suggests a construction

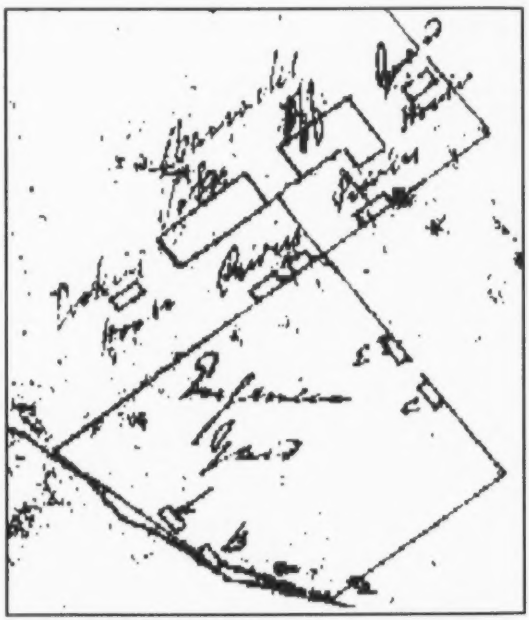


FIGURE 2. Undated plan of the Military Establishment showing location of privies and cookhouse investigated in 1999 (dark shading) and the stone Officers' Quarters and Soldiers' Barracks referred to in the text [NMC 19872].

rather than a destruction event. If indeed this is the case, the most likely origin for the stone debris would be from the foundations of the stone Soldiers' Barracks, the Officers' Quarters or the stone kitchen (Triggs 2000) - the only stone buildings at the Military Establishment (Figure 2). The stone flakes found in the excavation area are white limestone and not the distinctive brown stone visible in the above-grade portion of the extant Officers' Quarters. Excavation along the foundations of all of these buildings by Burke Penny (1975), Mark Warrack (1980a; 1980b) and Triggs (1996; 1999) revealed that white limestone was used in the foundations. If the stone flakes represent debitage from the construction of any one of the stone buildings it would have been deposited beginning *circa* 1831, the beginning date of construction for the Soldiers' Barracks and the Officers' Quarters (Historic Naval and Military Establishment n.d.). This would mean of course that the structure below the midden, the field tent encampment, would have to date between 1828, the arrival of the military in Penetanguishene and 1832, the date that the soldiers actually moved into the half-completed stone barracks (Historic Naval and Military Establishment n.d.). Artifacts found within the midden suggest an 1833 to mid-1840s date of deposition. Regimental buttons recovered include the 34th (1838), 93rd (1843), 66th (1833), a Lower Canada Voluntary Militia button (1838-1843) and the 82nd (1844). These regiments were stationed at Penetanguishene during the periods indicated.

THE GREAT FLOOD - WATER-WASHED SEDIMENT, DRAINS AND WALKWAYS

Overlying all previous deposits is a layer of what appears to be water-washed grey sand. This deposit is composed of fine sedimentary particles and is confined to the area represented by the midden and the tent encampment. The limits of the deposit are probably dictated by the surface topography of the area. The area defined by the midden and stone debris is in a slight depression and it appears that the water-washed sediment has simply collected in the shallow basin. The accumulation of sediment may be related to the installation of a large ceramic drain (15" diameter) which crosses the excavation area. The drain appears to date to the Reformatory period (1859-1904) because it is covered by a thick sandy loam deposit tentatively dated to post-1870 (see below for discussion). Sleeper trench depressions and rows of nails found in situ suggest the presence of a wooden walkway which may have been in use during the time that the area was inundated with water-washed sediment.

POST-1870S LANDSCAPING:

Overlying all previous features and layers is a 15-30 centimetre thick deposit of dark brown sandy loam with a high percentage of small brick fragments and flecks throughout. This landscaping deposit is widespread across the study area and in fact covers both the latrine and temporary kitchen discussed below. The presence of brick debris may indicate that the layer was formed during the dismantling of the stone Soldiers' Barracks after fire destroyed the building in 1870 (Long 1994). Brick dividing walls within the interior of the stone barracks together with chimneys are the likely source of brick rubble. Artifacts within the layer include a variety of military period artifacts together with building debris such as wrought and machine-cut nails and window glass. This is the only layer in which a large proportion of the assemblage is comprised of architectural debris.

MODERN FILL:

Several deposits of modern sandy loam including topsoil and sod cover the entire study area. These deposits contain a mixture of mostly 20th century material together with a few 19th century artifacts.

FIGURE 3. Student Krista Parsons excavating lower layer of privy soil. Sample locations are indicated to right and left.

depth of about 1.2 metres (Figure 3). The edges of the cut are not vertical but instead slope down on about a 75 degree incline to the bottom of the pit which is flat. Interestingly, the alignment of the hole itself is not parallel to the stone Soldiers' Barracks although it is known that the two buildings were contemporary. Fill within the privy consisted of a grey clay mixed with swirls and individual black streaks throughout, possibly feces. Included within the fill was a considerable amount of brick debris. These were concentrated in the east half of the privy where they apparently had been dumped into the hole. Bricks recovered were broken into pieces about a half-brick in size together with over-fired bricks, characterised by high vitrification and a mis-shapen appearance. If the bricks were dumped down into the hole while the privy was still in use, as seems to be the case, the brick may represent debris from the construction of the stone barracks and Officers' Quarters *circa* 1831-1832.

THE LATRINE

A structure labeled as 'Privies' appears on a single undated plan of the Military Establishment (Figure 2). Several lines of evidence suggest that this plan may in fact represent the earliest map of the Military Establishment. The map, entitled "Site of barracks and proposed buildings ..." (National Map Collection, Ref. #19872) depicts the Officers' Quarters and the stone Soldiers' Barracks - both of which were at least partially completed by 1836 - the privies described above, two other privies and a cookhouse (discussed below). The absence of the stone cookhouse, completed in 1836, indicates that the plan dates between 1832, when the barracks were at least half completed (see above), to *circa* 1835. Using this plan the location of this structure was plotted and six excavation units laid in. The discovery of the feature represents the first soldiers' latrine excavated at the Military Establishment.

Excavation revealed that the latrine had been dug into the natural clay subsoil for a

Further evidence suggests that the latrine may not have been used for an extended period of time: namely, the scarcity of artifacts and the shallow deposit of night soil. The depth of the lowest layers of privy soil ranges from about 15 to 30 centimetres in thickness. Within this soil only a few pieces of animal bone and one fragment of wood were recovered. At the base of this lowest layer of privy soil, a division between two privy holes was identified where a ridge of clay subsoil separated the two 'holes'. A total of five soil samples were taken from this deposit by driving sterilized aluminum cans into the soil using a wooden mallet (Figure 3). These samples will be analysed for pollen, macro-plant materials, soil chemistry and parasites.

Some time after the brick debris was deposited the privy was infilled with a layer of mixed sand. This deposit is found in all units in the latrine area and was clearly intended to fill in the hole and level the area. Overlying the sand was the post-1870 landscaping deposit (described above) found over the entire north end of the site. Following this, the area was covered by sod and topsoil.

The Temporary Cookhouse

In 1998 four excavation units were placed at the west end of the former Soldiers' Barracks (Figure 2) to investigate a cookhouse that appears on the undated map of the Military Establishment, tentatively dated between 1832-1835. According to the plan this structure measured about 33' by 15' and was positioned so that the south wall of the building was aligned with the south wall of the Soldiers' Barracks and the Officers' Quarters. Units were positioned to intersect the east wall of the structure and to provide a stratigraphic cross-section of the area through the long axis of the building. Five additional units were laid in this year to determine the size of the structure by attempting to locate the south, east and west walls.

Information recovered in 1999 corroborated the cartographic evidence regarding the long dimension of the structure (32' as opposed to 33'), although the short dimension remains to be verified. Of greater interest was the type of information recovered concerning the method of construction. On the east end of the building a 30 centimetre deep trench had been excavated into the subsoil presumably for the placement of a wooden sill, although no evidence of such a feature was found. On the opposite end of the structure, 32 feet to the west, the end of the building was marked by a post hole rather than a sleeper trench. The difference in construction technique was due to the sloping ground over which the building had been constructed. The downslope side of the building was approximately 50 centimetres lower than the up-slope side necessitating a supporting post (and possibly beam) frame to keep the building on a level plane. While this in itself is not remarkable (another example of a post supported structure on a sloping terrace was documented in the naval part of the site, see Triggs 1999: 87) the fact that this was done in this particular location is what stands as peculiar.

In the military end of the site there is ample level ground upon which to build. However, the location of the temporary cookhouse was chosen not for reasons of practicality but instead to conform to ideas of architectural spatial patterning. Referring to Figure 2, the position of the cookhouse is aligned with the south wall of the stone Soldiers' Barracks and the stone Officers' Quarters and spaced precisely the same distance from the Soldiers' Barracks as is the Officers' Quarters. In other words, the building was positioned according to a rigidly adhered to sense of spatial organization rather than any consideration of the land surface upon which it was to be built. In fact, the cookhouse was built on the only section of ground in the entire Military Establishment that was not level. This type of spatial organization, reflective of the highly organised, rigidly controlled military hierarchy operating at the time of the building's construction, stands in contrast to the more haphazard spatial arrangement of buildings in the earlier Naval Period.

Other structural features found include sleeper trenches, a mortared stone platform for either a fireplace or stove, and a brick drain exposed in three other excavation units. This drain was exposed in one unit where it was found in a trench dug to a depth of about 1 metre below the present grade. The drain has been documented before (Warrack 1980a; 1980b) where it was found in association with the Officers' Quarters. This brick box drain was presumably for directing waste water from the Officers' Quarters, the Soldiers' Barracks, the cookhouse, and possibly the privies, down to

the lakeshore. The total length of the feature is projected to be over 175 metres from east to west.

Conclusions

The 1999 season was successful in the identification and recording of structures that had not been disturbed through previous undocumented archaeological investigations on the site in the 1950s and 1960s. The excavation of a tent encampment, although limited in scale, represents the first such investigation of this type for an early 19th century military field encampment. The discovery of a latrine, while not providing copious amounts of artifacts as expected, did provide evidence of the first structure of this type at the Military Establishment. Further analyses of soil samples promise to provide information on the health and hygiene of the soldiers stationed at this remote base. The investigation of the temporary cookhouse provided details of construction technique but, perhaps more importantly, the evidence together provides an intriguing picture of the regulatory structure so characteristic of the military bureaucracy. Continued research in the Military Establishment planned for the 2000 season will expand on these and other areas of the military occupation on the shores of Georgian Bay.

References

HNME (Historic Naval and Military Establishment)
n.d. Interpreters manual. Notes on British regiments stationed at Penetanguishene, Section VIII, ii.

Jury, Wilfrid and Elsie McLeod Jury
1959. *The Naval Establishments at Penetanguishene: Bastion of the North - 1814-1856.* Bulletin No. 12. Museum of Indian Archaeology, The University of Western Ontario, London, Ontario.

Long, Anne
1994. Sentenced to Penetanguishene: A Study of Reformatory Inmates, 1859-1904. Thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts to the Department of History, Laurentian University.

Parrington, Michael, Helen Schenck, Jacqueline Thibaut
1984. "The Material World of the Revolutionary War Soldier at Valley Forge", in *The Scope of Historical Archaeology: Essays in Honor of John L. Cotter,* David G. Orr and Daniel Grozier, eds., pp. 125-161. Philadelphia: Laboratory of Anthropology, Temple University.

Penny, D. Burke
1975. Report on Archaeological Work, Summer 1974: Historic Naval and Military Establishments, Penetanguishene. Report on file with Huronia Historical Parks and the Ministry of Culture and Recreation.

Warrack, Mark
1980a. Archaeology Report, 1979: Historic Naval and Military Establishments, Penetanguishene. Report on file with Huronia Historical Parks.

1980b. Archaeology Report, 1980: Historic Naval and Military Establishments, Penetanguishene. Report on file with Huronia Historical Parks.

Triggs, John R.
2000. "Excavations in the Military Establishment at Penetanguishene: Wilfrid Laurier Archaeological Field School at Discovery Harbour."

Annual Archaeological Reports of Ontario, (New Series) Vol. 10, pp. 76-83.

1999. "Excavations in the South Complex: Wilfrid Laurier Archaeological Field School at the Historic Naval and Military Establishments at Penetanguishene." *Annual Archaeological Reports of Ontario, (New Series)* Vol. 9, pp. 83-89.

1996. Report on the 1995 Excavations at the Historic Naval and Military Establishments. Unpublished manuscript on file at Wilfrid Laurier University.

1994. "Wilfrid Laurier Archaeological Field School at the Historic Naval and Military Establishments at Penetanguishene." *Annual Archaeological Reports of Ontario, (New Series)* Vol. 5, pp. 107-111.

1992. "Archaeological Investigations at the Historical Naval and Military Establishments at Penetanguishene." *Annual Archaeological Reports of Ontario, (New Series)* Vol. 3, pp. 95-99.

THE 1999 UNIVERSITY OF TORONTO AT MISSISSAUGA FIELD SCHOOL AT THE MEYER SITE (AFGX-26), REGIONAL MUNICIPALITY OF HALDIMAND-NORFOLK

GARY WARRICK

INTRODUCTION

The Department of Anthropology, University of Toronto at Mississauga (UTM) conducted a field school during the last two weeks of August at the Meyer site (AfGx-26), located on the west side of the Grand River between Cayuga and York, Regional Municipality of Haldimand-Norfolk. A total of 17 students participated in the field and lab work and the field school was directed by the author.

The Meyer site (AfGx-26) was discovered and registered in 1974 by David Stothers. It was categorized as a multicomponent Princess Point - Late Woodland Iroquoian site. In 1997, shovel testing was carried out by a research team from UTM, as part of the Princess Point Project directed by Gary Crawford and Dave Smith (Crawford et al. 1999). In 1998, a field school was conducted on the northern edge of the site, resulting in the recovery of over 25,000 artifacts, 17 cultural features and 137 post moulds in a 32 square metre block excavation (Smith 2000). Recovered artifacts suggested a single component Princess Point occupation for the site.

Wilfred Laurier University
Brantford Campus

In the summer of 1999, UTM research excavations expanded the 1997 excavations, locating a confusing palimpsest of features and post moulds and recovering artifacts that confirmed the original identification of the site as multicomponent Princess Point, Uren, and historic Neutral. The 1999 UTM field school was designed to determine the southern extent of overlapping features and posts that were revealed in the previous excavations, to delineate any non-overlapped Princess Point house floors that might be encountered and to determine the western limits of the site through shovel testing.

SITE LOCATION

The Meyer site (AfGx-26) is located on the west bank of the Grand River, south of the village of York, in the Regional Municipality of Haldimand-Norfolk. The site occupies about 2.0 hectares along the edge of a terrace, approximately 250 metres from the Grand River. A wide grassy flat separates the terrace from the river. The site is bounded to the south by a farmhouse and outbuildings and to the north by a small bushlot containing an intermittent stream with a deep cut bank. Soils vary across the site: fine loamy sand in the north and heavy clay loam to the south and west. In the summer of 1999, the site area was a cow pas-

ture, with a thick growth of thistle in the north half.

Field Activities

A two metre wide trench was extended south of the 1999 limits of the block excavation (574N line of the grid) (see Smith 2000). The eastern edge of the trench followed the 575E line of the excavation grid and extended 17 metres south to 487N line.

Ploughzone was shovelled into 3 millimetre or 6 millimetre mesh screens. Every fourth square was processed through 3 millimetre mesh. Students trowelled the ploughzone-subsoil interface in order to identify pit features and post moulds. All features and posts were mapped with cross-tape triangulation from five metre grid stakes, but only six of the pit features were excavated. The fill from all six excavated features was bagged for flotation. The excavated area was backfilled.

Results

The ploughzone of 34 one metre squares was excavated yielding in excess of 30,000 artifacts, mostly Onondaga chert flakes, small pottery sherds and unidentifiable bone fragments. Diagnostic lithic tools and ceramics suggest a multicomponent occupation (i.e. Princess Point, Uren, historic Neutral), dominated by Princess Point material. Two noteworthy artifacts are a triangular quartzite point and a fragment of a clay effigy pipe. The quartzite point resembles those recovered from the Uren type site (Wright 1986) and the effigy pipe fragment may be associated with a historic Neutral occupation.

Twenty-four features were revealed in the excavated trench but only six were mapped, profiled and excavated. Only one pit feature produced diagnostic artifacts - Feature 101 yielded the basal portion of a Princess Point pot. The unexcavated features were mapped as part of a field school exercise for the students. Over 100 post moulds were also mapped but none were excavated because of suspected overlapping and subsurface posts, deemed to be too complicated for field school students to grasp.

Shovel testing to the western edge of the site revealed a concentration of flakes (30 metres north-south by at least 20 metres east-west) on a small knoll 50 metres west of the 1999 excavation. The soil is a heavy clay loam on this knoll. No pottery was recovered from any of the shovel test units. Considering that this flake concentration is separated from the Meyer site excavations by 30 metres of sterile test pits, it is possible that the flake scatter represents an earlier Archaic occupation, distinct from the Meyer site. Futher testing is required in order to verify this hypothesis.

The Meyer site (AfGx-26) is a densely-occupied site, producing on average about 1000 artifacts per square metre. The extremely high artifact density and the complex overlapped settlement patterns at the site imply that the Princess Point occupation of the site occurred over several centuries. Based on the relatively low number of Uren and historic Neutral diagnostics recovered, the occupations during the latter time periods were probably brief or sporadic - camps and not village occupations.

Acknowledgements

I would like to acknowledge Dr. David Smith and Dr. Gary Crawford (both with the University of Toronto at Mississauga) for allowing me to direct the 1999 University of Toronto at Mississauga (UTM) archaeological field school. Dave Smith provided invaluable assistance with logistics, equipment, and data and fieldnotes from previous investigations of the Meyer site. Jeff Bursey, Beth Major and Frank Dieterman served as field teaching assistants. Frank Dieterman was the teaching assistant in the UTM lab. The UTM students were enthusiastic both in the field and the lab and provided an enjoyable atmosphere in which to work. Peggy Weston and Candice Hill, students at the Brantford Campus, Wilfrid Laurier

University, washed, sorted and catalogued the bulk of the artifact sample.

REFERENCES

Crawford, G.W., D.G. Smith, F.A. Dieterman and T.L. Ormerod
1999. "Lower Grand River Bars and Terraces: The 1997 Princess Point Project Field Season." *Annual Archaeological Report, Ontario (New Series)* 9: 98-105. Ontario Heritage Foundation.

Smith, D.G.
2000. "The 1998 University of Toronto at Erindale Field School at Meyer (AfGx-26), Ontario." *Annual Archaeological Report, Ontario (New Series)* 10: 72-75. Ontario Heritage Foundation.

Wright, M.J.
1986. *The Uren Site AfHd-3: An Analysis and Reappraisal of the Uren Substage Type Site.* Mongraphs in Ontario Archaeology 2.

SITE/PROJECT SPECIFIC ACTIVITIES: THE COMMONS AT FORT GEORGE NATIONAL HISTORIC SITE: 1999 ARCHAEOLOGICAL PROJECT SUMMARY

HENRY C. CARY

INTRODUCTION

Minimal archaeological and interpretive value has been assigned to small sites, largely due to the limited data that can be collected. However, archaeological investigations in 1999 of the Commons at Fort George National Historic Site revealed potential for small site analysis to aid in the interpretation and study of larger historic landscapes.

Although few items were recovered during the excavations, the artifacts represent Niagara's military heritage. The diverse assemblage provides a chronological sequence and gives a general picture of activities occurring on the Commons over a two hundred year period. While none of the artifacts recovered from the investigation are particularly unique, they provide insight into the significant historical events of which the Commons is a part.

A BRIEF HISTORY OF THE COMMONS AT NIAGARA

The area in Niagara-on-the-Lake now designated as the "Commons" was originally delineated as a reserve by the British military in 1796. Extending one kilometre west from the defensive works of Fort George to Butler's Barracks, the Commons provided a large expanse to restrict invading armies from approaching the installations unchecked (Figure 1). Little development occurred before the War of 1812, except for a building complex erected by the Indian Department.

It was not until the escalation of British-American hostilities in 1812 that the Commons saw active military use. After American troops besieged and captured Fort George on May 27, 1813, a series of defensive ditches was dug on the Commons. These were subsequently countered by British siege works constructed to situate their artillery positions closer to the American batteries (Carter-Edwards 1999:6).

The Commons received limited military attention in the post war decades, with the only major developments being rebuilding the Indian Council House and construction of a commandant's quarters. When threat of American invasion emerged during the 1860s, activity again took place on the Commons. This time, it served as training grounds for local militia and regular units. It was in this role that the property served until 1966.

Relatively few events have altered the historic landscape of the Commons since jurisdiction of the property was transferred to Parks Canada. In 1987, a plan to lease an area for pri-

Parks Canada Agency, Ontario Service Centre
111 Water St. E.,
Cornwall, ON K6H 6S3

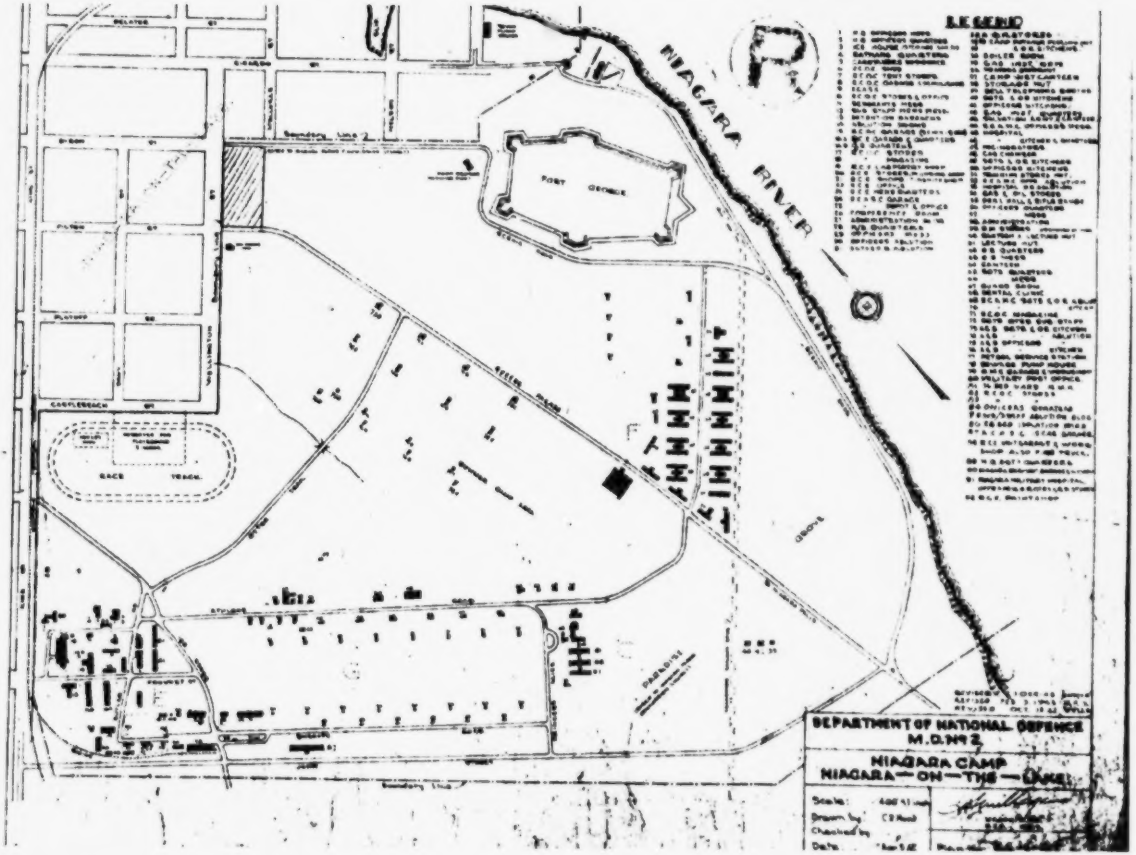


FIGURE 1. Plan of Camp Niagara, 1947. This map shows the relationship of the Commons to the establishments of Fort George to the east side, and Butler's Barracks on the west boundary (from McConnell 1978:193).

vate development on the north central portion of the Commons was formulated, and the following year construction of the Upper Canada Lodge (a retirement home) began. This arrangement allowed Parks Canada to maintain ownership of the lot and protect archaeological resources on that section of the reserve. Recently, an asphalt bicycle path was laid over the original Otter Trail, a historic roadway established during the military occupation of the Niagara complex. This project was completed in 1997 (Last 1998:117-120).

THE 1999 INVESTIGATION STRATEGY

Between the 9th and 13th of May, 1999, archaeologists of the Ontario Service Centre carried out test excavations and monitoring on the north-central area of the Commons, prior to the emplacement of an asphalt footpath. Conceived to provide access to the extant bicycle path, the foot path was to extend from the Upper Canada Lodge to the historic Otter Trail (Figure 1). As the proposed pathway called for topsoil removal with a gradeall, there was concern that cultural deposits would be destroyed in the process.

Investigation of the Commons followed three distinct mitigation strategies. Given the nature of deposits uncovered during previous investigations at the Upper Canada Lodge site and along the bicycle path, it was decided that seven 50 centimetre by 50 cemtimetre test pits be excavated to provide a representative sample of archaeological resources in the area.

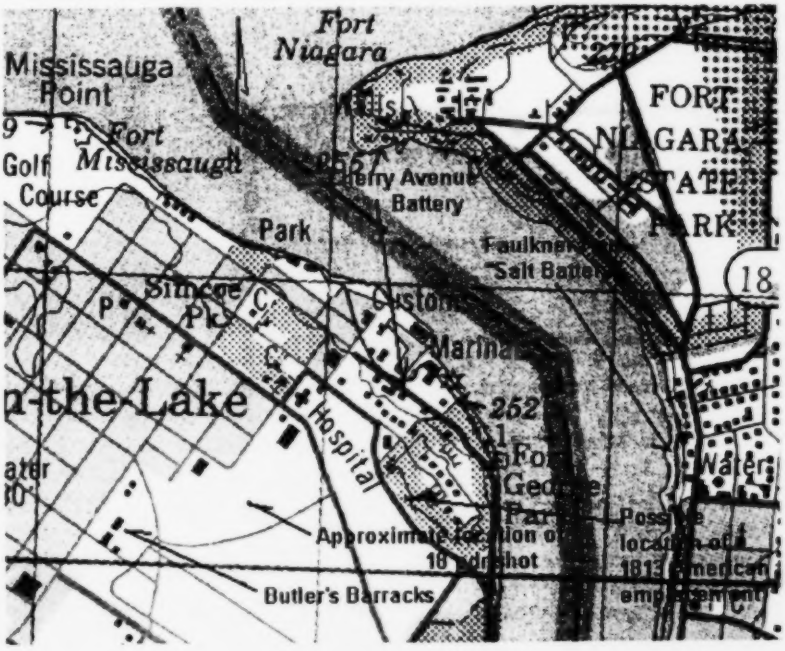


FIGURE 2. Approximate locations of 18-pounder batteries on the Niagara frontier in 1812 and 1813. North is orientated to the top of the map. Each block (delineated by light grey lines) represents one square kilometre.

vate development on the north central portion of the Commons was formulated, and the following year construction of the Upper Canada Lodge (a retirement home) began. This arrangement allowed Parks Canada to maintain ownership of the lot and protect archaeological resources on that section of the reserve. Recently, an asphalt bicycle path was laid over the original Otter Trail, a historic roadway established during the military occupation of the Niagara complex. This project was completed in 1997 (Last 1998:117-120).

THE 1999 INVESTIGATION STRATEGY

Between the 9th and 13th of May, 1999, archaeologists of the Ontario Service Centre carried out test excavations and monitoring on the north-central area of the Commons, prior to the emplacement of an asphalt footpath. Conceived to provide access to the extant bicycle path, the foot path was to extend from the Upper Canada Lodge to the historic Otter Trail (Figure 1). As the proposed pathway called for topsoil removal with a gradeall, there was concern that cultural deposits would be destroyed in the process.

Investigation of the Commons followed three distinct mitigation strategies. Given the nature of deposits uncovered during previous investigations at the Upper Canada Lodge site and along the bicycle path, it was decided that seven 50 centimetre by 50 centimetre test pits be excavated to provide a representative sample of archaeological resources in the area.

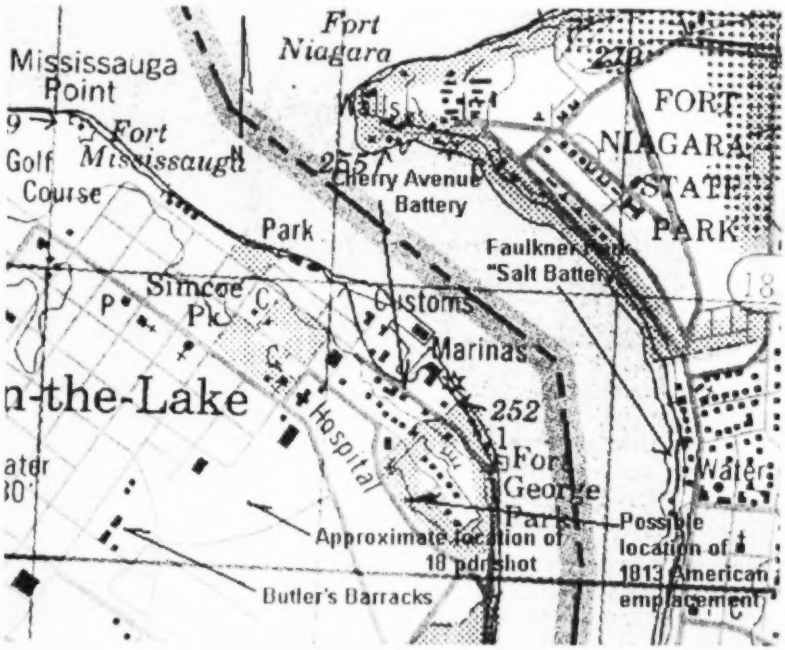


FIGURE 2. Approximate locations of 18-pounder batteries on the Niagara frontier in 1812 and 1813. North is orientated to the top of the map. Each block (delineated by light grey lines) represents one square kilometre.

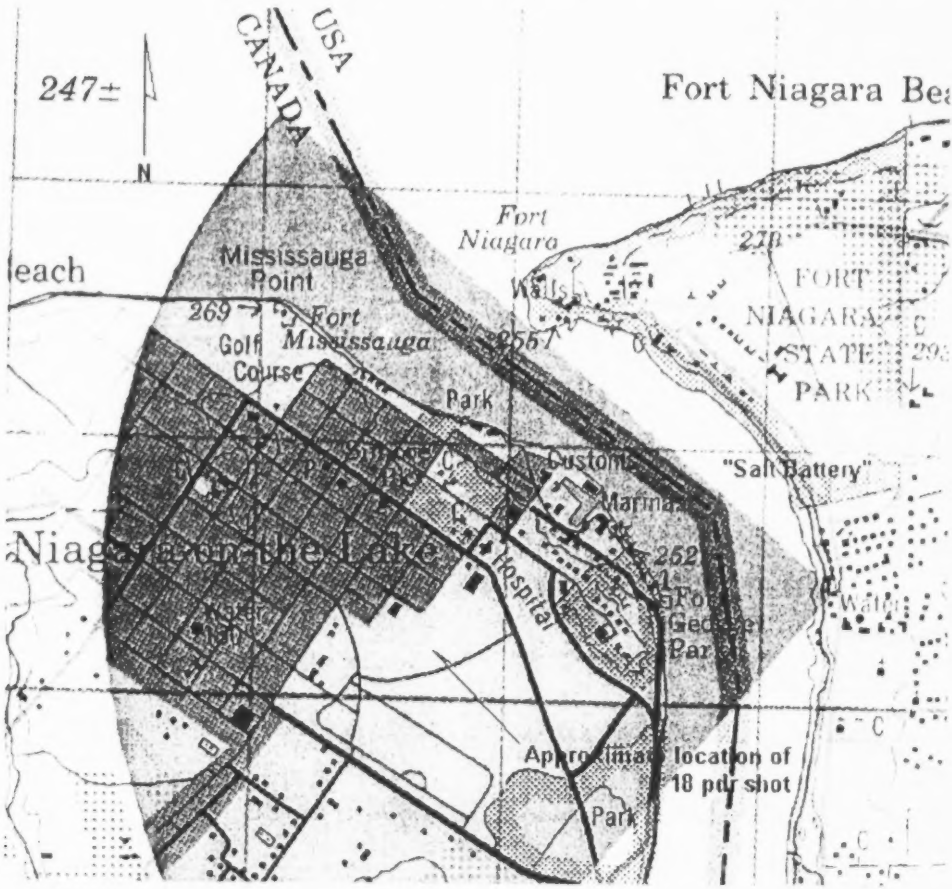


FIGURE 3: Approximate range of fire for the 18-pounder artillery pieces situated at the "Salt Battery" (1812-13). The area shaded in light grey indicates the range of fire from the "Salt Battery" to British occupied Niagara. This is calculated from contemporary accounts listing the utmost range of an 18-pounder long gun as 3,190 yards (2.9 kilometres) when at maximum elevation. The position where the cannonball was found is approximately 1.5 kilometres (1,641 yards) from the "Salt Battery" emplacement.

Following the test pit excavations, a metal detector survey was conducted over the proposed pathway area. The grade-all excavation was then monitored. After the heavy machinery stripped the area of soil, the metal detector was used again to search for any signals obscured by the soil overburden. This post excavation survey proved fruitful in recovering many artifacts.

SUMMARY OF STRATIGRAPHY

Excavation revealed approximately seven phas-

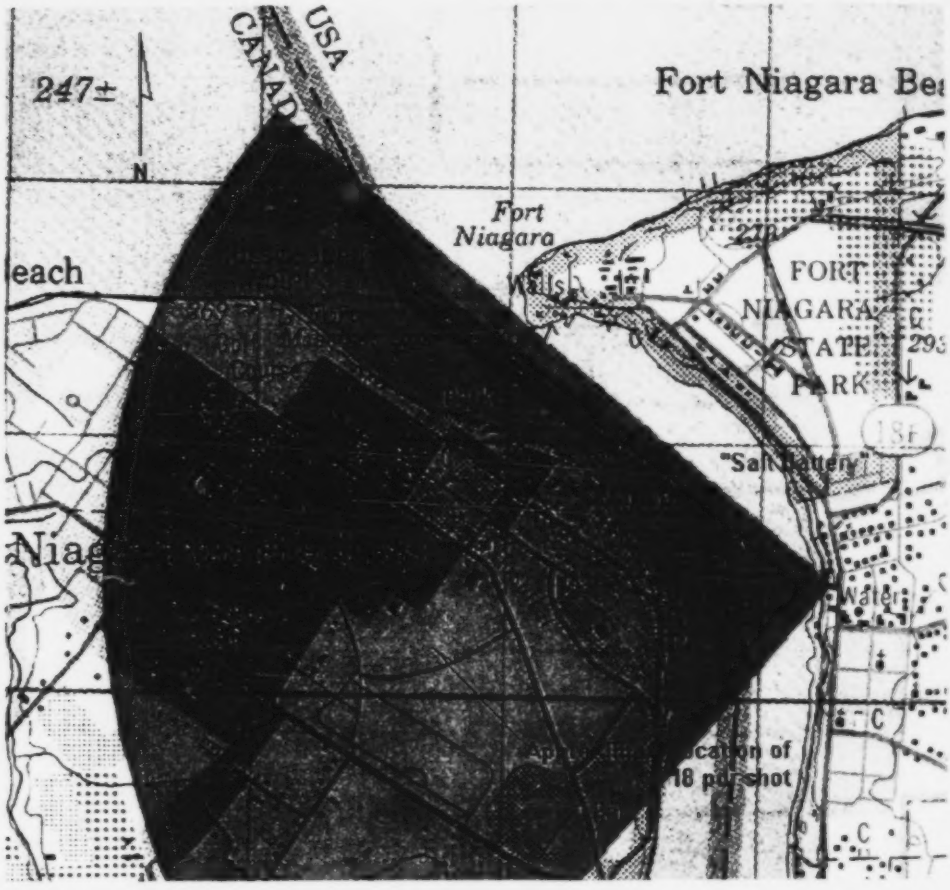


FIGURE 3: Approximate range of fire for the 18-pounder artillery pieces situated at the "Salt Battery" (1812-13). The area shaded in light grey indicates the range of fire from the "Salt Battery" to British occupied Niagara. This is calculated from contemporary accounts listing the utmost range of an 18-pounder long gun as 3,190 yards (2.9 kilometres) when at maximum elevation. The position where the cannonball was found is approximately 1.5 kilometres (1,641 yards) from the "Salt Battery" emplacement.

Following the test pit excavations, a metal detector survey was conducted over the proposed pathway area. The grade-all excavation was then monitored. After the heavy machinery stripped the area of soil, the metal detector was used again to search for any signals obscured by the soil overburden. This post excavation survey proved fruitful in recovering many artifacts.

SUMMARY OF STRATIGRAPHY

Excavation revealed approximately seven phas-

es of soil deposition, only two of which were the result of fill activities. The stratigraphy followed a general sequence of four periods of natural soil development. In each pit, a layer of modern sod covered an earlier surface deposit, believed to originate during the late eighteenth century. Support for this conclusion was the appearance of natural 'B' Horizon sand below the buried sod levels. All seven squares were excavated to natural 'C' Horizon deposits.

THE ARTIFACTS RECOVERED: TOWARDS A STORYLINE FOR THE COMMONS

The 18-Pounder Cannonball

Of the fourteen artifacts found during the Commons excavations, four represent the military presence at the site from the War of 1812, to the Second World War. The most interesting artifact found was a cast iron cannonball. It was recovered during the metal detector survey approximately 30 cm below surface and within the historic sod horizon. The ball is 12.96 cm (5.09 inches) in diameter and weighs approximately 7.95 kilograms (17.66 pounds). Although slightly underweight, this projectile is referred to historically as an 18-pounder, solid shot cannonball.

Discovery of a cannonball some distance from a known military installation, such as Fort George or Butler's Barracks, instantly raised several questions. Not only is the ball of a larger calibre than commonly used in field gun batteries, it was found nearly a kilometre west of Fort George, the nearest heavy artillery emplacement. Even more problematic was its lack of association with any feature or building used to store ammunition. Clearly the ball was not idly dropped there from an ammunition cart or forgotten during some past gunnery practice. This cannonball reached its position by being fired there.

Artillery pieces capable of firing an 18-pound cast iron projectile were quite rare on the Niagara frontier during the War of 1812. The majority of guns used no larger than nine to twelve pound rounds (Bowering 1979:57-58). By assuming the cannonball came from an 18-pounder gun emplacement, the origin of the ball was isolated to three batteries - one British and two American (Figure 2). The British gun emplacement called the Cherry Street Battery, to the north of Fort George, could easily be ruled out as it was trained, not surprisingly, towards the American positions on the opposite side of the Niagara River. This left only the two American gun batteries as possible candidates.

The most likely origin of the ball is the American position known as the "Salt Battery," in present day Faulkner Park. It was situated up river from Fort Niagara and almost directly across from British occupied Fort George (Figure 2). Named for the salt bags used to construct its barricade, the "Salt Battery" boasted a formidable array of artillery; two 18-pounder long guns on garrison carriages, two 6-pounders, two 8-inch mortars, and two 8-inch howitzers (Bowering 1979:394). In preparation for the amphibious invasion of Fort George on May 27th, 1813, the "Salt Battery" provided the most effective fire of the American bombardment. The gun position was so close to Fort George that when a direct hit was made, the American gun commander saw wooden siding from the blockhouse fly into the air. Although most of the shots fired from the battery found their mark on the buildings across the river, perhaps in the heat of action and under fire from Fort George's cannons, an 18-pounder gun crew slightly over elevated the cannon and propelled a shot well past the opposing position. The ball need not have landed too far off its intended target as solid shot tended to bounce hundreds of yards from its first point of impact.

Due to their important and specialized positions on the battlefield, artillery regiments of both the American and British army kept

meticulous records on the capacities of their weaponry. Numerous experiments were carried out to test the range, velocity, and destructive power of guns in active service. Therefore, as the American battery location and maximum range of an average 18- pounder long gun is known, charting a conjectural path for the cannonball, from the "Salt Battery" to its final resting place on the Commons, is possible.

The calculation results are graphically illustrated in Figure 3. Shaded portions of this figure show the direction and maximum range of shot, using a 6-pound powder charge and firing at 15 degrees elevation, the highest listed angle in contemporary sources (data from Adye 1813:210). An 18-pounder long gun during the early nineteenth century period had an "utmost range" of 3,190 yards (1.8 miles), approximately 2.9 kilometres (Adye 1813:208). However, even this distance would have placed the ball well beyond the find spot on the Commons. Additionally, the cannonball was within the matrix of the buried sod layer, and not driven into the subsoil by the force of impact. It is thus likely that the original landing point of the shot was much closer to the fort. The cannonball probably reached its position by initially grazing (bouncing), landing again, and finally rolling to a stop in the grass of the Commons. The location of the ball this far from the fort may be one reason it was found in the archaeological record. Artillery ammunition was a precious commodity in the Niagara frontier and cannonballs fired on Fort George were actively collected in battle and subsequently loaded into the British guns (Cruickshank 1990:26).

A less likely origin for the ball was from an American gun position in Fort George established after the Americans consolidated their beachhead on June 9th, 1813. After the Americans captured the fort, they modified the gun positions on the western side of the fortifications and mounted an 18-pounder on a swivelling carriage (Figure 2). Few major military operations took place after the fort capitulated and use of the gun was probably limited to returning fire on the British field batteries harassing American defensive works.

Finding the cannonball on the historic sod surface and such a short distance from the western earthworks would have involved firing shot with an uncharacteristically small charge of powder. Experiments conducted in the 1750s and listed in Fortune (1992:8) found the "ordinary force of cannon, fired at 200 yards [183 metres] distance, drives a ball into solid earth 10 or 12 feet [3.05 metres or 3.66 metres], in earth less compact 15 or 16 feet [4.57 metres or 4.88 metres], and into sand or loose earth 22 or 28 feet [6.7 metres or 8.53 metres]." Although the distance from Fort George's western fortifications to the cannonball find spot is approximately 600 yards (550 metres), it is well within the effective range of an 18-pounder gun. Were the ball fired from this distance, it would likely cause substantial surface disruption and proceed to depth.

Another interesting aspect of this cannonball is that its diameter (5.09 inches or 12.96 centimetres) is larger than the 5.04 inches (12.80 centimetres) recorded for English iron shot. Conversely, the ball diameter is not as large as the 5.27 inch (13.39 centimetres) size used in French pieces. It does, however, fit into the high gauge range listed for 18-pounder shot in 1843 (McConnell 1988:290). It is unlikely that the ball dates to this latter period as Fort George had by this time fallen into disuse. Additionally, an 18-pounder round was not commonly used by field batteries.

There are two ways to explain the larger diameter of this shot. One explanation comes from historic accounts documenting the American bombardment of Fort George. During the cannonades on October 13th, 1812 and May 25th, 1813, heated rounds were used to destroy the wooden buildings of the fort. Although not mentioned specifically, the assumption is that the "Salt Battery" also used "hot shot" in a systematic effort to raze Fort

George's wooden defenses. When heating a cannonball to red-hot state, the diameter increases by a sixteenth of an inch (0.16 centimetres). An American artillery manual dating to 1860 reports that heated shot does not "return when cooled to its original dimensions, but retain[s] a permanent enlargement" (Gibbon 1970:262). John Light (Light 1999: personal communication), one of Parks Canada's leading authorities on metals, proposes that this phenomenon results from incomplete heating of the ball in a hot shot oven. Because heating a cannonball only proceeds until the metal is red, the outside boundary of the shot expands while the inner core remains cool. Limited heating of shot was not exclusively for maintaining rapidity of fire in a combat situation. As heat expanded the diameter of the ball, the ability to fit the shot into the muzzle of the piece became increasingly compromised the longer it remained in the oven. As the cast iron cools, the outer boundary shrinks but can only do so marginally due to resistance from the inner core. It is possible that the cannonball found was heated, loaded and fired over the fort, and gradually cooled as it came to rest on the Commons. Interestingly, the shot retained a larger diameter even after decomposition caused partial exfoliation of the outer surface.

An equally plausible, though less dramatic, explanation for the large diameter is that it was manufactured slightly oversize. Production of cannonballs during this period was not a precision industry and there was a margin of size variation allowed for ammunition manufacturing (McConnell 1988:287). Between 1716 and 1825, the difference between the high gauge and low gauge allowance for an 18-pounder was 0.084 of an inch (0.20 centimetres); from a low range of 5.04 inches (12.80 centimetres), to a high range diameter of 5.124 inches (13.01 centimetres). The diameter of the ball from the Commons fits within this range of variation, and exfoliation may have reduced it from a larger size.

The Copper Friction Tube

It was not until grass and soil almost completely obscured the solitary cannonball that the next conflict in Canadian history left its residues on the Commons. Also found within the buried sod layer was a rolled copper friction tube, an artillery ignition device adopted for service in 1853 (McConnell 1988:370). Filled with a mixture of potash, antimony and sulphur, the tube was inserted into the vent of the gun, located at the breech. A small copper bar (a pull tab) was soaked in a detonating composition and then placed in the short arm projecting perpendicularly from the top section of the tube. This bar was, in turn, attached to a lanyard rope. By pulling the lanyard quickly, the friction between the tube and the bar created a spark that would ignite the charge in the tube. The flame would be forced into the breech of the gun, setting alight the larger charge within the cannon barrel. After the gun fired, the friction tube was discarded and a new one installed upon loading the next charge.

Made from rolled copper sheeting 0.07 centimetres in thickness, the artifact itself measures just 7.9 centimetres in length with a diameter of 0.5 centimetres. Preserved on the tube is blacking, a protective covering used to prevent the tube from tarnishing. This is typical of friction tubes used before the widespread introduction of rifled guns in the 1870s. As the pull tab is missing, the assumption is that use and discard of the tube occurred during the 1860s border crises, when local militia units used the Commons for artillery training. Thus, the tube represents the continuing military presence in Niagara and the pervasive fear of hostilities with Americans.

The Lee Enfield Cartridges

Two more artifacts found during the metal detector survey emphasize the ongoing military presence on the Commons. Both are .303 Lee

Enfield cartridges. The Lee Enfield rifle was one of the longest serving combat weapons in the world, being first issued in 1895 to the British Army and still in use until recently. Standard issue for the Canadian infantryman beginning in 1914, the Lee Enfield went through numerous modifications until eventually being replaced in the 1950s.

Stamped on the base was the model number, manufacturer, and sometimes date of production. On both cartridges is a small broad arrow representing the Army Board of Ordnance and that the rounds were for military service. Other small marks were found, "DAC" and "D (broad arrow) C" stamps, denoting the ammunition manufacturer. In this case, both stamps show that the Dominion Arsenal in Montreal, Quebec produced the cartridges. One of the rounds also exhibited a date of "1944" and a "VII" marking which designates use in the Mark 7 model of Lee Enfield Rifle. Despite the absence of a date or model marking on the other cartridge, it likely that its production also dates to the Second World War period. Both cartridges are blank rounds, evidenced by crimping near the top of the cylinder.

Once again, these artifacts point to use of the Commons as a military training ground and another time in Canadian history when the country was thrown into war. From the First World War until the 1960s, thousands of troops were trained on the Commons prior to their posting overseas. It was here that they became familiar with their weapons, and practised the tactics and manoeuvres of modern warfare. Numerous mock battles on the Commons pitted regiment against regiment in friendly competition, truly different from the action they would later see in the combat and peacekeeping theatres of Europe, Africa and Asia. The cartridges suggest the presence of just such a training manoeuvre.

CONCLUSIONS

The results of the 1999 investigations of the Commons do not drastically alter the understanding of historical events that happened in Niagara during the nineteenth and twentieth centuries. They do, however, reveal archaeology's contribution in creating an interpretive storyline for the Commons. The creation of such a narrative often requires a visual component to aid in its delivery, one that can symbolize succinctly historic events within the limits of a single object. Although diminutive, the artifact collection from the 1999 excavations represents each salient event in the Commons' history and highlight the longstanding military and public use of this space.

Additionally, the investigation expanded the knowledge of Fort George and Butler's Barracks' cultural resource boundaries. For instance, artifacts such as the cannonball relate to wartime actions at Fort George, whilst the friction tube and Lee Enfield cartridges are pertinent to use of the Barracks during the training periods. Realization of the Commons as utilized space between these two major military installations is fundamental for further public interpretation of the site and the historic establishments on its east and west flanks.

REFERENCES

Adye, Ralph Willett
1813. *The Bombardier and Pocket Gunner. Seventh edition*, revised and corrected by William Granville Eliot. G. Hayden, London.

Bowering, Ian M.
1979. *A Study of the Utilization of Artillery on the Niagara Frontier."* Manuscript Report No. 446. Ottawa: Parks Canada, Environment Canada, Ottawa.

Carter-Edwards, Dennis
1999. *Occupational Synopsis of Butler's Barracks/ Camp Niagara.* Manuscript on file Parks Canada, Ontario Service

Centre, Cornwall.

Cruickshank, Ernest
1990. *The Battle of Fort George*. Revised 4th Edition. Niagara Historical Society No. 12, Niagara-on-the-Lake, Ontario.

Fortune, T.
1992. *The Artillerist's Companion*. Reprint of 1778 edition. Museum Restoration Service, Bloomfield, Ontario.

Gibbon, John
1970. *The Artillerist's Manual*. Reprint of 1860 edition. Greenwood Press, Westport, Connecticut.

Last, Joseph
1998. "Military Sites Archaeology, Parks Canada, Ontario Service Centre: 1997". In *Annual Archaeological Report, Ontario (New Series)* 9:117-130. Ontario Heritage Foundation.

McConnell, David
1978. *A Study of the Military Buildings at Niagara-on-the-Lake, 1871-1978* Manuscript Report No. 244. Parks Canada, Department of Indian and Northern Affairs, Ottawa.

1998. *British Smoothbore Artillery: A Technological Study*. Parks Canada, Environment Canada, Ottawa.

ONTARIO HERITAGE FOUNDATION: 1999 FIELDWORK

DENA DOROSZENKO

The Ontario Heritage Foundation (OHF) is a not-for-profit agency of the Government of Ontario whose mandate is to protect, promote and preserve the architectural, archaeological, cultural and natural heritage of the province for present and future generations.

In the course of acting as a provincial trust, the OHF has acquired a vast quantity of acreage deemed provincially significant because of it's natural heritage/environment. To date, the OHF holds 99 natural heritage sites across the province, 59 of which are Bruce Trail properties.

Beginning in 1997, a survey program was initiated to document the archaeological resources on these properties. Stage 1 assessments were completed in 1998 on 32 properties. The Bruce Trail properties will be dealt with as a separate project. As a result, many of the Natural Heritage properties were identified for Stage 2 testing based on their level of potential for the discovery of archaeological sites. This work began in 1999 and wil continue for a considerable length of time until all properties have been assessed.

10 Adelaide St. E.,
Toronto, Ontario
M5C 1J3

ELLIS PROPERTY, TOWN OF JORDAN

Below the Town of Jordan in the Niagara peninsula is a 60 acre property that is part of the Twenty Mile Creek valley. Survey work in 1999 on this tract involved documenting 2 sites. A historic farmstead, dating to the middle of the 19th century was found in the northeast quadrant of the property. Features exposed included part of the stone foundations of the house. Additional buildings related to the farm operation are known, including a frame barn, however locating these buildings did not take place due to time constraints. Furthermore, a brick warehouse, related to a wine business on the property during the 20th century, was torn down in 1986, it's location is known but the exact dimensions, date of construction are unknown and these structures were not located in 1999. Late 19th and mid-20th century artifacts were recovered reflecting long term occupation of the property.

The second site was an area of debris resulting from erosion of the cliff on the east side of the valley. The debris consisted of artifacts dating primarily to the late 19th to early 20th century. It is known that additional structures once stood on the edge of the cliff and have been lost due to the erosion of this area over time. The entire slope north and south of the stairs is covered with artifacts. In the area closest to the

stairs the artifacts consist primarily of glass and ceramics. A cursory glance suggests that most of these date to the late nineteenth or early twentieth century. Further to the north there is another midden located beneath the slope behind the schoolhouse. Made up of large pieces of iron: bed springs, roofing material and car parts this refuse area is much more recent. The midden is bounded on the south by a stone berm. Notes in the OHF files indicate that a local farmer applied to the Foundation to repair the slope with local stone in 1989. The slope was also cleaned and rubbish removed at this time.

Additional work on this property is scheduled for the 2001 field season to complete the Stage 2 assessment of the property.

Switzer Property, Grimsby

The Switzer property is located directly to the south of Dorchester Road. The lower slope is lightly treed primarily with second growth forest. As one moves up-slope, the vegetation becomes denser with low underbrush and scrub. The upper slope is characteristic of a talus or scree slope. Previous visits to the site had resulted in a single find along the top of the slope. The area directly to the north of the Bruce Trail is fenced with a wire and wood fence.

Save for a strip roughly 4 metres wide along the top of the escarpment, the property is entirely contained within the slope of the escarpment. In this particular area the slope is so steep as to make settlement of any kind impossible. In many places the upper slope is a vertical rock face and completely impassable. A large wash or gully bisects the upper and lower slope. Although there are several terraces located about halfway up the slope most are too small or too steep to provide shelter or settlement.

Located almost directly behind one of the residences on Dorchester Rd about one third to half way up the slope is a large terrace extending out from the slope above about 8-10 metres north-south. Centred on this terrace is a small dry-laid limestone foundation. This small foundation measures approximately 19 feet (6 metres) east-west and 7 feet (2.5 metres) north-south. In most places this a single stone wide; however in two places—on the south wall near the south east corner and midway along the north wall —there is a section (on each wall) measuring about 2-2.5 feet where the stones are double width. Similarly on the west end the stone is much more heavily concentrated, possibly suggesting a chimney base or porch foundation. Lying just to the outside of the long walls are two logs, one on each side of the foundation. Neither of these logs have any visible nails—thereby making dating of these artifacts not immediately apparent. Both logs have been sawed at the end and both have had their bark stripped from the length of the log.

A survey of the area around the foundation failed to yield any artifacts. The logs are in good shape and the foundation sits above the grade and has remained free of leaf vegetation. These and other factors may suggest that this foundation is of recent vintage (twentieth century). Nonetheless, this feature should be investigated further.

Cochren Property, Grimsby

Located to the south of Regional Road 81 (Highway 8) this property runs behind the residential lots and a single commercial property. The site was walked and a visual evaluation of site conditions was made. The site is located on the slope of the escarpment. A small clearing is located among the dense vegetation approximately 20 metres to the south of the tree line near the east side of the property. While testing did occur on this property it is recommended that further (limited) Phase II testing of this clearing be undertaken.

Because of the difficult terrain and distance from water sources it is not anticipated that this property will yield significant archaeological

FIGURE 1. ROM day program students learn excavation techniques in the field at Ashbridge.

information—either pre or post contact.

Ashbridge Estate, Toronto

The 1999 field season at the Ashbridge Estate, located in the east end of the City of Toronto saw two projects. Early spring was the return of the University of Toronto Field School (see Latta this volume) and in the month of July, the return of a number of summer day camp programs with the Royal Ontario Museum (ROM). The area where excavations took place is found in the rear yard of the 1854 Jesse Ashbridge house. Early 20th century photographs of this area show several outbuildings having stood there at least until 1911. As a result, excavations for public programming were conducted in one area. What also made this area attractive for the purposes of public programming was the fact that for approximately 20 years it had been used as a vegetable garden and had a thick layer of topsoil fill. Six day programs were conducted with the ROM groups, a total of 110 youth participated. The students did not finish excavation of the first layer and hence, no features were encountered. A total of 373 artifacts were recovered, mostly related to gardening activities in this area and it's use for the disposal of de facto refuse.

Homewood Museum, Maitland

In August, the Foundation Archaeologist and a small crew consisting of 2 Field Assistants, Mary Cate Garden and Tarnya Troidl, as well as five summer students, conducted a 1 week field assessment of an area on the grounds of the Homewood Museum.

South of the apple shed there once stood an ash pit, a privy and a smokehouse. Excavation testing in this area was hopeful of producing results that would merit further investigation

FIGURE 2. Homewood Museum located in Maitland, Ontario. Built *circa* 1800.

FIGURE 3. Excavations in the rear yard of Homewood, 1999.

for a public archaeology program in 2000. Several test units provided sufficient information to locate the approximate position of the smokehouse which once had stone foundations. No evidence for the ash pit nor the privy were encountered. A total of 1,918 artifacts were recovered during this short investigation.

PETUN AREA 1999

CHARLES GARRAD

During 1999, two sites in the Petun area were monitored and surface collected, but the principal work consisted of continued excavations on the McQueen-McConnell BcHb-31 archaeological site, granted to the writer. Non-licensed activity included escorting visiting descendants Chief Janith English and Darren English of the Wyandot Nation of Kansas, and Chief Leaford Bearskin and Councillors, of the Wyandotte Tribe of Oklahoma, on their first visits to the ancestral homeland.

THE MCQUEEN-MCCONNELL (BCHB-31) ARCHAEOLOGICAL SITE

The excavation in 1999 of part of a disturbed midden on the McConnell segment of the McQueen-McConnell (BcHb-31) Archaeological Site, near Collingwood, Ontario, continued from previous years as a research and public outreach project of the Petun Research Institute (Inc.) and a Volunteer Opportunity within the Passport-to-the-Past program of The Ontario Archaeological Society (Inc.), with the gracious consent of the site owners, Mr. & Mrs. William and Helen McConnell. Eleven participants excavated, received hands-on experience and an overview of the Petun area. A number of participants from previous years returned to visit and view the work.

Petun Research Institute
103 Anndale Drive, North York, Ontario
M2N 2X3

The 1999 excavation was of one week duration (July 11-17), with time off for tours of the Petun area and to the Ball site. Site preparation took place earlier, and the subsequent artifact analysis and report compilation later. Six one-meter squares and the baulks between them, comprising just under two cubic metres of earth, were completely excavated by hand using trowel and screen in 5 centimetre levels to subsoil, and were then backfilled. The existing grid system laid out in 1993 was extended, and is left in place for next year (2000). Artifacts were washed and conserved daily as necessary and as part of the instruction. Analysis and recording by the writer took place during the fall and early winter. The participating crew comprised Sylvia Davis, Marie-Claude Felton, Jay Gemmill, Vickie Hayler, Joyce Long, Melanie & Jim Priestman, Ashley Stock, Andrew & Dorothy Tapajna, and Marjorie Tuck, variously from Barrie, Coldwater, Dundas, Etobicoke, Fonthill, Mississauga and Toronto, in Ontario. Marie-Claude was particularly welcomed as our youngest as well as our furthest-travelled participant, attending from Magog, Quebec.

Supervisory and experienced staff were Janet Turner, Ella Garrad, and the writer, who extends grateful thanks to all these good people. Thanks also go to Helen and Bill McConnell for gracious hospitality and continuing support of our endeavours, to Kay Hodgins, talented artist, for skilful drawings of exotic pipes, and to Dave Hunt and Marjorie Tuck who came during the site preparation phase to help move a large rock.

RESULTS

The 1999 recoveries were consistent with the existing interpretation of the deposit as belonging to the protohistoric GBP1, determined by earlier finds, which included a few items of European brass and copper. A total of 2,907 artifacts of native origin were recovered, of which 1,878 (65%) were plain bodysherds, 458 (16%) were chert, and 35 were quartzite pieces and fossils of only possible native association, plus one 20th century beer-bottle cap at level `c' (10-15 centimetres down), the only certainly intrusive item.

The rimsherd sample was hugely dominated by a single type, Sidey Notched, at 81% (the seven-year average is 73%), this being interpreted as a temporal marker for GBP1. Huron Incised followed at 8%. Also recognized were Black Necked (5%), Innisfil Collarless, MacMurchy Scalloped Notched and Warminster Horizontal at 2% each. Sidey-Notched rimsherds were distributed throughout the excavated squares at all levels, but Huron Incised were at levels `b' and `d', and the minor types were clustered at levels `d' and `e'. Whether this stratigraphy has significance is not known. Pottery quality varied but was usually fairly good, with small rims. Chert was overwhelmingly (87%) from nearby Fossil Hill formation outcrops, followed by Kettle Point (5%), Onondaga (4%), Dundee (3%) and Bois Blanc. The only finished tool was a projectile point of Onondaga chert. Again this is interpreted as consistent with a newly arrived group engaging in extensive on-site lithic manufacturing for off-site use. Two drilled sandstone discoidal beads and one polished bone awl tip were recorded. Faunal remains including fish bone and scales, nuts, a corn cob, and a bean reflect dietary patterns at this site. Ten fragments of clay pipes were found, six of which related to three typable bowl types, a Coronet (variant), a disc-topped decorated (ring), and a possible Effigy Snake Coiled. While these fit well into the clay pipe-bowl typology system developed by the writer in 1974 (Garrad 1977), the Coronet and Disc Topped decorated (of which three fragments were found) are unique. The Coronet is the most popular Petun clay pipe bowl type, but this specimen, of which only one corner was recovered, is decorated with what seems to be a weeping human face above the corner peak, with the pattern of punctates between bars on the side repeated on top, and is the only known such in existence. A report on the pipe to the archaeological community drew no mention of any similar specimen (Garrad 2000).

McQueen-McConnell is not the earliest site in the Petun area but is presently considered to be the first that can be traced by a continuous sequence to the historic Petun Deer. The abundance of Fossil Hill chert on this and other contemporary Petun sites is in stark contrast to its total absence from such contemporary Huronia area chert-starved sites as Molson. The same disparity is observed in beaver bones, wherein might lie the explanation.

Previous observations that the midden deposit, although extensively disturbed, nevertheless justifies careful excavation, and is still fairly rich with material when excavated carefully, was confirmed. Work will continue in 2000, and a more advanced artifact analysis will occur when the excavation is completed.

Adopted petite-fille Marie-Claude went home to Quebec and wowed her teachers and fellow pupils with her adventures in the Petun homeland of Ontario.

FIGURE 1.
McC4n21wC-CPB1 (restored) Clay Pipe Bowl typed as Disc Top Decorated, but motif more resembles the usual Coronet. Drawing by Kay Hodgins.

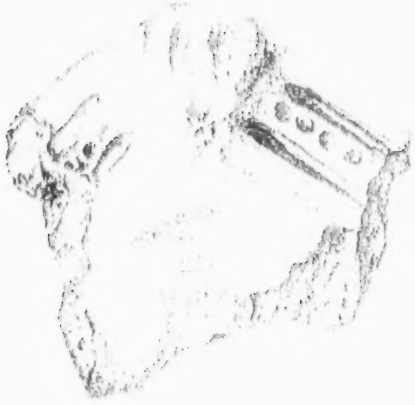


FIGURE 2. McC 3n19wB-CPB1 (top) Motif on the side is repeated with added humanoid face. Drawing by Kay Hodgins.

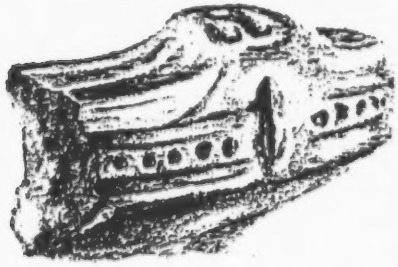


FIGURE 3. McC 3n19wB-CPB1 (side) Showing decoration on side of pipe. Drawing by Kay Hodgins.

REFERENCES

Garrad, Charles

1977. "Some Petun Area Data." *Arch Notes* 77-4:7-13 Toronto: The Ontario Archaeological Society

2000. "An Unusual Petun Coronet Clay Pipe." *Arch Notes* 5(1)15-16 Toronto: The Ontario Archaeological Society

MILITARY SITES ARCHAEOLOGY, PARKS CANADA, ONTARIO SERVICE CENTRE: 1999

JOSEPH LAST

In 1999, Military Sites archaeologists from Parks Canada, Ontario Service Centre (OSC), undertook investigations at several Ontario military sites and at the grave site of Alexander Mackenzie, Canada's second Prime Minister. For the most part, the goals of the projects were similar. All focussed on evaluating cultural resources within well-defined corridors and assessing impacts resulting from stabilization and site development activities. The investigations used a variety of mitigative strategies involving metal detecting, shovel sampling, test pitting, intensive excavation, and monitoring during construction. The military projects included pathway construction on the Niagara Military Reserve in Niagara-on-the-Lake (Henry Cary this volume); the installation of a fence line at Fort Malden, Amherstburg; repairs to the caponnière floor and an examination of the shoreline breakwater at Fort Wellington, in Prescott; resource inventory and monitoring of hydro utilities, a parking facility and re-enactment 'pyro-pits' at Fort George, Niagara-on-the-Lake. The examination of the Right Honourable Alexander Mackenzie grave site in Sarnia was a condition assessment (Stephen Mills this volume). The military projects furthered our knowledge of the construction phases at Fort Wellington and at Fort George. They also provided essential resource inventories for previously unexplored areas on the Niagara Military Reserve and at Forts George and Malden. By increasing our understanding of the historic resources within the study areas, the projects helped us make informed recommendations to CRM managers regarding site development. They also contributed to our ongoing strategy for resource protection and presentation.

Parks Canada Agency, Ontario Service Centre
111 Water St. E.,
Cornwall, ON K6H 6S3

FORT GEORGE NATIONAL HISTORIC SITE, NIAGARA-ON-THE-LAKE

INTRODUCTION:

On three separate occasions during the 1999 field season, a three-person crew undertook investigations at Fort George, National Historic Site. Each supported site development in areas that had previously received little or no archaeological testing. The projects involved mitigating upgrades to the hydro services; testing for an extension to the existing bicycle path on the Fort George Military Reserve (Last 1998, Henry Cary this volume); excavating 'pyro-pits' for a summer re-enactment event; and assessing the location for a proposed parking lot north of the site.

During the War of 1812, Fort George was substantially reduced in size to make it a more tenable defensive work. Its transformation from a poorly defended supply depot to a position of strength is well documented in both the archaeological and historical record. Over the past few decades, archaeological investigations have provided insights about the sequence of these modifications. Defensive ditches delineating the trace of the smaller, second Fort George have been found archaeologically. While they have provided an understanding of how the site was altered, they offer little information about who instigated the changes. Although the British intended to cut the fort in half, it appears that the Americans fashioned the second, smaller work (Last 1997). This assumption requires additional research and thus every opportunity to explore more of the site is welcomed.

Given the location of the study areas, the hydro line and 'pyro-pit' projects had the highest potential to augment our knowledge of Fort George during the War of 1812. As important, however, is the need to discern the effects of the 1937/40 restoration activities on the historic resources. Before John Wilson's work in the 1970s, many believed that few resources survived the indignities of the heavy earth-moving equipment used in reshaping the site (Wilson and Southwood 1976). We now know that, while the restoration irreversibly damaged portions of Fort George, other areas were spared. With every project we obtain a better understanding of the integrity of the in situ resources and how best to deploy our energies.

Fort George Hydro Installation.

In early May, O.S.C. archaeologists undertook excavations on the east glacis of Fort George. The project supported municipal upgrades to hydro services along Ricardo Street, a thoroughfare bordering the site. As part of the improvements, the town required a new transformer. Its proposed location was at the foot of Fort George and south of the Stone Cottage, a structure built and used during the reconstruction. The upgrade necessitated the laying of an additional hydro line from the transformer up to Fort George. Following a previous service corridor (Hydro and Centrex), it ran from the Stone Cottage westward to an existing transformer hidden within the defensive ditch shielding the Flag Bastion.

Rather than using a back hoe or ploughing machine to install the line, we employed trench- less technology to shoot conduit from Ricardo Street to the fort. This greatly reduced disturbances to the resource and minimized the need for archaeological mitigation (Figure 1). We limited archaeological investigations to the proposed area of the transformer and to portions of the hydro corridor requiring connections and hookups.

No archaeological testing had ever occurred on the Stone Cottage property. However, mitigation in support of repairs to a retaining wall, some 30 metres to the south, revealed early alterations to the 1796 terrain (Mills 1997). During the construction of the fort, the British Army removed defensive 'dead' zones around the site by infilling depressions on the glacis. We anticipated that the present investigations would help determine the extent of these landscape modifications. They would also provide an opportunity to reveal additional features associated with Fort George development.

To accommodate the transformer installation, we opened an excavation unit just west of Ricardo Street and south of the hedge bordering the Stone Cottage. At a depth of 0.85 metres below present grade excavations encountered natural 'B' Horizon soils. Above this stratum lay a buried 'A' Horizon. It represents the original sod circa 1796. Overlying the sod was an early 19th century fill deposit. We presume it to be part of the site modifications made during the first construction phase of the fort.

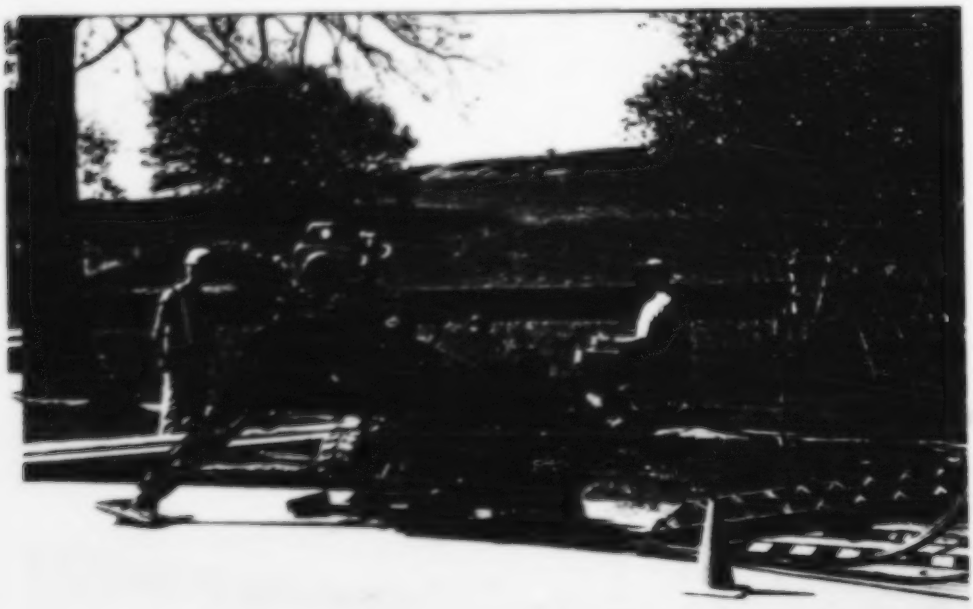


FIGURE 1. Installing gas line at the base of Fort George glacis using 'trenchless technology'. Flag bastion in the background. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 102H-11T.

Capping the fill layer is another buried sod line dating to the mid 19th century. It contained numerous refined white earthenware fragments (blue transfer printed wares, spatter ware and blue painted ware) and vitrified white wares. All nails recovered from the deposit were of cut manufacture and thus support a similar date of deposition. The upper elevations of the stratum possessed plough scars indicating agricultural activity. While the military may have used the area as a garden, documentary evidence for this is lacking. Cartographic records show that by 1835, T. McCormick leased or owned the lot (McConnell 1977). It is more likely that he, rather than the army, farmed the property. A layer of fill and a 20th century occupation overlie the plough zone. The latter contains construction material and is associated with the reconstruction phase of the site. It, in turn, is sealed by the most recent layer of sod.

The investigations revealed only one feature: a 'French' drain containing water-rounded cobbles. It runs north-south though the property and excavation unit. Artifacts from the feature suggest a pre-reconstruction date. Past excavations have encountered similar drains associated with the military construction in Niagara.

While experiences with trench-less technology have always been positive, boring comes with its own particular problems. The severe gradient of the glacis, coupled with a dense cobble beach deposit, resulted in an unsuccessful first attempt at installing the line. Twice, the sensor guiding the bore head died and had

to be retracted. Twice, we required a back hoe to extract the bore reamer when it became lodged in the compacted cobble deposit. The resulting trench, located midway up the glacis, measured 14.0 metres in length. To connect the lines with the existing site transformer, a two-metre long trench was also needed. Still, given that the corridor stretched for more than 100 metres this trenching was minimal. Overall, the technology has much merit. Although it provides little knowledge about the land it traverses, it is an extremely passive technique that can be used to avoid known historic resources.

FORT GEORGE 'PRYO-PIT' TESTING.

At the request of Heritage Presentation at Fort George, a three-person crew spent two days excavating test pits to hold pyrotechnic charges for a planned 1812 re-enactment. We also reopened holes excavated in 1996 to examine the physical effects of past explosions on the surrounding strata and cultural deposits. Before our arrival, site staff staked the locations of the 1996 'pyro- pits' along with several new ones. In total, they identified fifteen holes on, or about, the crest of the southwest glacis and bastion. Eventually, we examined six: four on the glacis and two on the bastion proper (Figure 2).

The investigations began by testing three of the 'pyro-pits' used in 1996. Each measured 0.4 metres square and averaged 0.5 metres in depth. All of the pits contained vestiges of the packing medium used to provide the illusion of a true explosion. Dispersed throughout the back dirt matrix were varying amounts of cedar wood chips and peat moss. Excavations revealed similar material along the interfaces of the 'pyro-pit' walls. In each instance, damage caused by

FIGURE 2. Asterisks mark the location of excavated 'pyro-pits' along the crest of the southwest glacis and Bastion at Fort George. View facing west. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 19H-2109T.

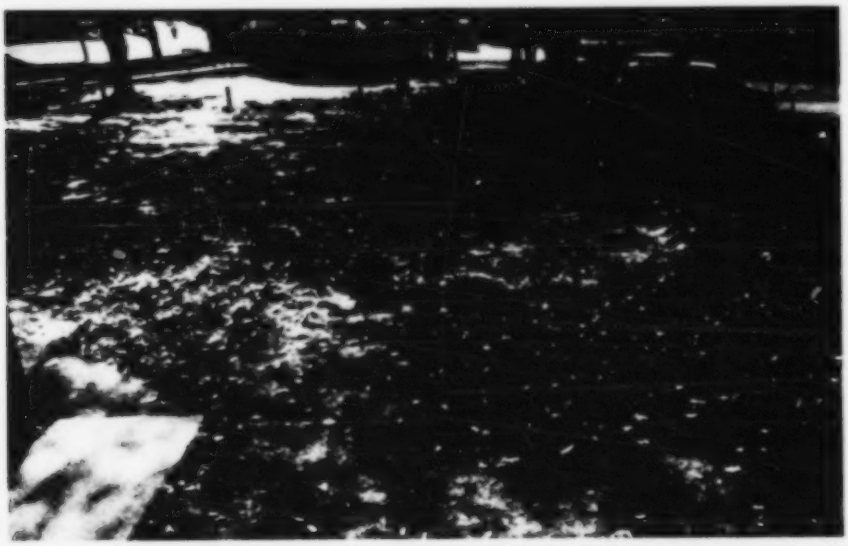


FIGURE 3. View of test pits at the site of the proposed Byron Street parking facility. Fort George is located in the upper lefthand corner of photo. View facing west. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 19H

re-enacted explosions was small. It appears that the charge was directed to explode upwards rather than sideways. Since the holes were excavated into hardpad clays, the force of the explosion dispersed the cedar chips and peat upwards into the air without undue impact upon the surrounding strata.

The presence of creosoted wood fragments and wire nails in the deposits forming the glacis show that its upper strata date to the 1937 reconstruction. Since the installation of the 'pyro-pits' have not affected historic resources, no further testing was required for this sector of the site. Our testing by the south ravelin produced identical results.

We also investigated one new 'pyro-pit' situated at the extreme eastern edge of the southwest glacis. Testing revealed that beneath the present 'A' Horizon lay a deposit of mottled fill of undetermined thickness (layer exceeds 0.30m in thickness). Containing early 20th century material, it dates to the 1937 reconstruction period.

We also examined two of the seven 'pyro-pits' situated on the southwest bastion. Both revealed a succession of fill deposits associated with recent landscaping or the 1937 reconstruction period and contained creosoted wood fragments and wire nails. Given that the other pit locations were employed in previous re-enactments and only intrude upon resources post-dating 1937, we undertook no additional testing. Instead, our energies were spent in mapping their location in order to reuse them for future re-enactments.

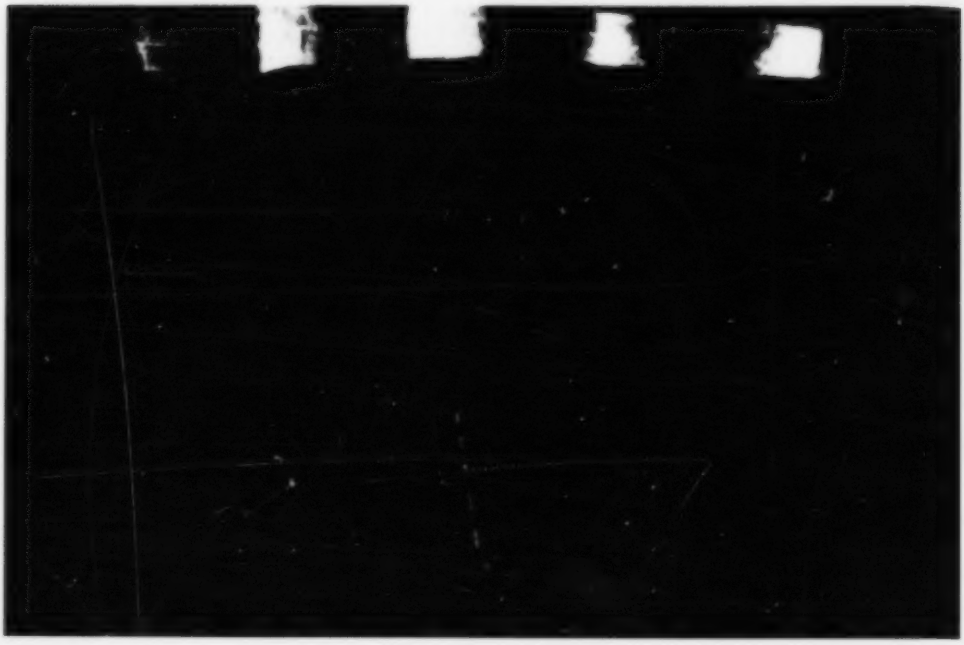


FIGURE 4. Interior view of the caponnière at Fort Wellington showing undulating nature of the flagstone floor before excavation. View facing south. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 2H-2436T.

Fort George Parking Lot Proposal. In response to a parking lot proposal north of the fort, a two-person crew undertook a three-day mitigative survey. Covering approximately 72 square metres, most of the study area fell north of the present driveway servicing the Bryon Street compound garage. We employed a stratified sampling strategy involving nine staggered, 0.5 metre test squares (Figure 3). Each was hand excavated and screened for maximum artifact recovery. The primary goal of the investigation was to assess the proposal's appropriateness by determining the nature and integrity of the resources within the construction corridor. Establishing the stratigraphic sequence for the north glacis was also an essential aim of our endeavours.

Situated on the northern glacis of Fort George, we anticipated that the study area lay beyond the centre of heavy site use. As such, we did not expect anything more than the normal sheet scatter of historic and recent material. Secondly, its proximity to the 'trading post', built during the 1937/40 reconstruction, led us to believe that it had undergone substantial alterations resulting from construction activities. Our investigations proved both assumptions wrong.

Wherever testing occurred, we found an undisturbed early occupation. Excavations unearthed Aboriginal material (in the upper elevations of the 'B' Horizon) along with historic deposits associated with founding of Fort George. However, we recovered only a few artifacts dating to the reconstruction period and observed no disturbances resulting from its

activities. This led us to hypothesize that the area was not part of the original 1937 park development. This proved to be the case. Plot plans dating to 1948 show that the boundary of the initial park did not incorporate the area east of Byron Street. Thus, the area was saved from the abuse of heavy construction equipment.

The stratigraphic sequence was consistent throughout. At a depth of 0.4 metres below present surface excavations encountered transitional 'C' Horizon silty clays. Above them lay a natural 'B' Horizon followed by a buried sod line. Dating to the late 18th /early 19th century the sod contained fragments of pearlware and creamware along with wrought iron nails. All belong to the first-phase occupation at Fort George. Excavations also unearthed several lithic flakes within the sod and upper portions of the 'B' Horizon.

Overlying the buried 'A' Horizon is a 19th century occupation. Cut nails, brick fragments, and faunal material predominate. While the investigations recovered some late 19th century artifacts (bottle glass), the absence of vitrified wares suggested that the occupation ends about 1850. Recent sod and topsoil development completes the sequence. As a testimony to the diligence of Park personnel, it was virtually clean of artifacts.

One feature, possibly a post hole was found along the northern limits of the study area. Measuring 36 centimetres in diameter, it may represent a boundary fence post. The presence of two- inch cut nails within the post fill-in indicates that the post was removed sometime during or after the 1830s. One modern intrusion, probably a hydro service, runs at a diago-

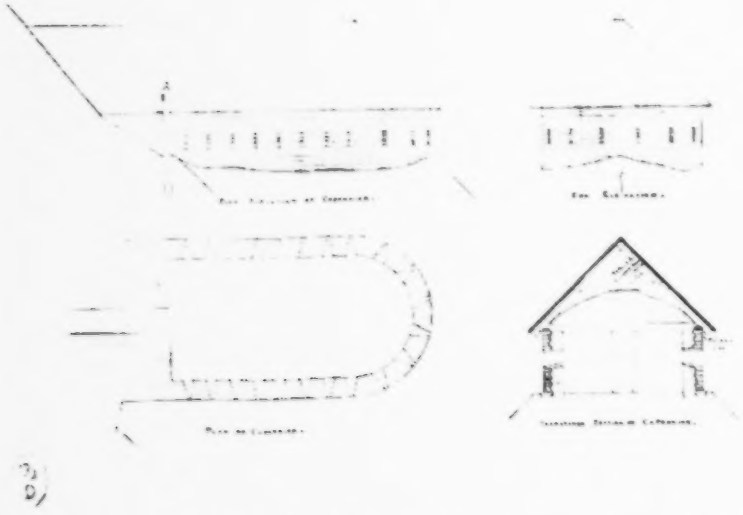


FIGURE 5. Portion of engineer's 1878 plan, entitled 'Repairs to Fort Wellington', detailing the caponnière at Fort Wellington. [PAC National Map Collection, C-97371 (H2/450/Prescott/1878)].

nal to Byron Street.

Considering the presence of early material, we recommended that the development be deferred until we research the historic use and ownership of the area. Preliminary cartographic study shows a structure on, or near, the property in 1810. Since the Army had not yet parcelled the land, we presume it to be associated with the military. By 1831 the Honourable James Crooks owned the property. His obituary notes that: [he] died at his residence, Flamboro' West, in March, 1860, aged 82. He was a resident of Niagara from 1794, having emigrated from Scotland when quite young. Was a merchant there for many years, shipped the first wheat and first flour from Niagara to Montreal, built the first paper mills in Flamboro', was a member of the Legislative Council for twenty-five years, was a Captain in the 1st Lincoln Militia and fought bravely at Queenston Heights. He was highly esteemed as a straightforward, reliable man (Carnochan 1973:252).

Additional research, we hope, will contribute to our understanding of the uses and personages associated with the property.

FORT WELLINGTON NATIONAL HISTORIC SITE, PRESCOTT

During late September, a two-person crew spent two days at Fort Wellington overseeing repairs to the caponnière. The uneven nature of about 9.6 square metres of the caponnière floor posed concerns for the health and safety of the visiting public. Continuous freeze/thaw cycles within the structure have caused the perimeter of the flagstone floor to shift differentially resulting in an irregular surface (Figure 4). To remedy this condition, site personnel proposed to raise and level the affected stone by modifying the elevation of the underlying fill. Since past investigations have revealed the fill to be important (Last et al. 1985), archaeological intervention was required.

Caponnières were devised during the late 15th century. By providing enfilade or flanking fire, engineers saw them as defence against an enemy insurgence into the ditch. The earliest examples can be seen in the works of Francesco di Giorgio (Hughes 1991). Developed further by Dürer and made popular by Montalembert, caponnières became an effective way of enhancing and concentrating fire power. Although employed throughout the British empire, they are rare in Ontario fortifications. They protect the ditches at Fort Henry (1829), the Kingston Martello Towers (1846) and at Fort Wellington (1839). However, the caponnière at Fort Wellington is unique in that it was an addition to an existing work rather than an initial defensive element. To augment flanking fire at Fort Wellington, Captain Randolph R. E. proposed the construction of a caponnière in 1839. Protruding from the south curtain of the fort, it allowed the garrison to enfilade the entire length of the ditch facing the St. Lawrence River (Figure 5).

Past excavations within the structure revealed an historic levelling fill immediately below the now exposed flagstone floor. While we firmly established the date of the fill to the construction of the structure, the date of the stone floor was less well defined. While we presume that the garrison laid the floor at the same time, this has not been proven (Last et al. 1985). By providing a larger sample size for study, we hoped that the present excavations would help to refine the date of the floor installation and its associated deposits.

Investigations involved raising flagstones, where present, and removing between 0.10 and 0.20 metres of underlying fill. Although the excavations were shallow, they nonetheless revealed eight discrete strata. The stratigraphic sequence mirrored that found during the 1981 excavations. The most recent was a demolition layer. It consisted of fine concrete dust deposited during the 1982 stabilization of the caponnière. Beneath it lay a clay/loam layer containing many wood chips. The deposit does not lie beneath the flagstone floor but is found in areas where the stone is absent. As such, the layer is

FIGURE 6. View of breakwater and wharf cribbing now forming part of landfill. View to the north. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 42H-182T

associated with repairs made to the bombproof ceiling sometime between 1925 and 1978.

Underlying the wood chip deposit is a layer of silty clay containing ash, wood chips, and small pebbles. It represents trench fill for a recent (post 1927) repair. Beneath it lay remains of a flagstone floor that have slumped into the various repair trenches that abut the interior walls of the structure. A very dark deposit of clay/sand, containing small pebbles and rock spall, lay between the interstices of rock and under the eastern edge of present flagstones. We interpret it as an occupation/ levelling fill. Unfortunately, artifacts within its matrix suggest that the layer was disturbed, or deposited, during the 20th century. Considering their proximity to the caponnière walls, the flagstones appear to have been raised and reset during a past repair activity thus contaminating our sample. Consequently, we gained little additional knowledge about the date of the flagstone floor and must await the opportunity for a larger scale investigation.

THE WATERFRONT PROPERTY, FORT WELLINGTON NATIONAL HISTORIC SITE, PRESCOTT

In early November, a two-person team monitored an exploratory investigation of the breakwater along the St. Lawrence River shoreline, in front and to the south of Fort Wellington. The Waterfront Property, as we now know it, is part of reclaimed land once owned and operated by the Bytown and Prescott Railway. Since the shoreline was part of Ordnance Lands, the railway constructed its operation beyond the shore on piles and tres-

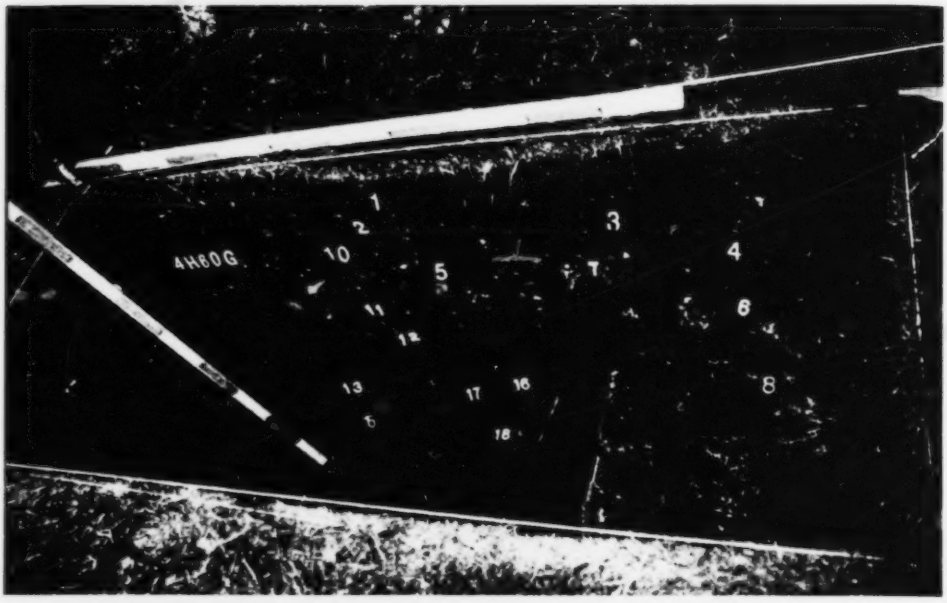


FIGURE 7. Stone foundation (nos. 6 and 8) of either the stable or carriage house. View to the west. Scale in 10 centimetre intervals. Photo by S. Mills. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 4H-2628T.

tles. The railway changed hands several times. Eventually the Canadian Pacific Railway took control of the property.

Through the years the railways modified the Prescott yard with the addition of fill, reclaiming the area enclosed between the original shoreline and the water-based trestle development. By 1910 only a small lagoon remained. Knowing that the study area consisted of late 19th to early 20th century fills, we limited our investigations to monitoring and recording. Our involvement was to review the excavation of a back hoe trench cut to determine why large pot holes were developing behind the present breakwater. We speculated that river water is leaching material behind the shoreline cribbing, now buried and protected by sheet-pile and rip rap. The trench ran for 13.5 metres north-south and averaged 1.55 metres in width.

Excavated to the depth of 0.57 metres below grade, the trench cut revealed three stratigraphic strata: recent sod, a layer of clinker and cobble, and a deposit of rock ballast of undetermined depth. It also exposed a cribwork composed of four 'cells' deep running the entire north-south length of the unit. The investigations showed that the cribbing, anticipated to be a 20th century breakwater, was far more extensive and complex since differences in crib size suggest more than one building phase (Figure 6).

The crib construction is a typical latticework pattern tied with iron fasteners. The southern most portion, or cell, is presumed the most recent addition. Sheet-pile presently protects its exposed waterside. The pile is bolted to the cribbing with bolts approximately 2 inches (0.05 metres) in diameter. Unlike the other

FIGURE 8. Commandant's House, Amherstburg, nd. Painting by Catharine Reynolds. Fort Malden National Historic Site.

cribwork, it is faced with a double row of horizontal wooden members creating, in effect, a double wall of timber. This section of the cribbing had dimensions measuring 3.3m east- west by 3.78 metres north-south.

The remaining crib sections are constructed of smaller timbers. At 0.23 metres square, they are roughly half the size of those forming the southern crib. Documentation suggests that they are a part of an earlier wharf construction built before 1897. We believe that the northern portion of the feature abuts the original, but yet unfound, 1852 train trestle. The crib cells forming the wharf are not uniform. Their north-south measurements were 2.50 metres, 1.74 metres and 2.22 metres respectively, as one moves away from the river. Wherever exposed, drop-forged wrought iron spikes fastened the cribbing together. The spikes are flat headed (diameter of 3.36 centimetres) with 50.5 centimetre-long shanks that measure 1.86 centimetres in diameter.

The discovery of the wharf cribbing, along with additional voids in their ballast, exposed the potential for future slumping in areas believed to be stable. From the investigations, we devised a passive engineering design. All holes and depressions were filled with granular material, sealed with heavy load-bearing filter fabric and buried under an additional 0.30 metres of fill. Future monitoring will determine the need for additional investigation.

FORT MALDEN NATIONAL HISTORIC SITE, AMHERSTBURG

Between April and June, staff undertook investigations of the newly acquired Wilson property at Fort Malden. Located in the extreme southwest corner of the site, the study area was formerly part of the Ordnance Property and site of the 1815 Commandant's Quarters. The project's goal was to mitigate 136 metres of fence

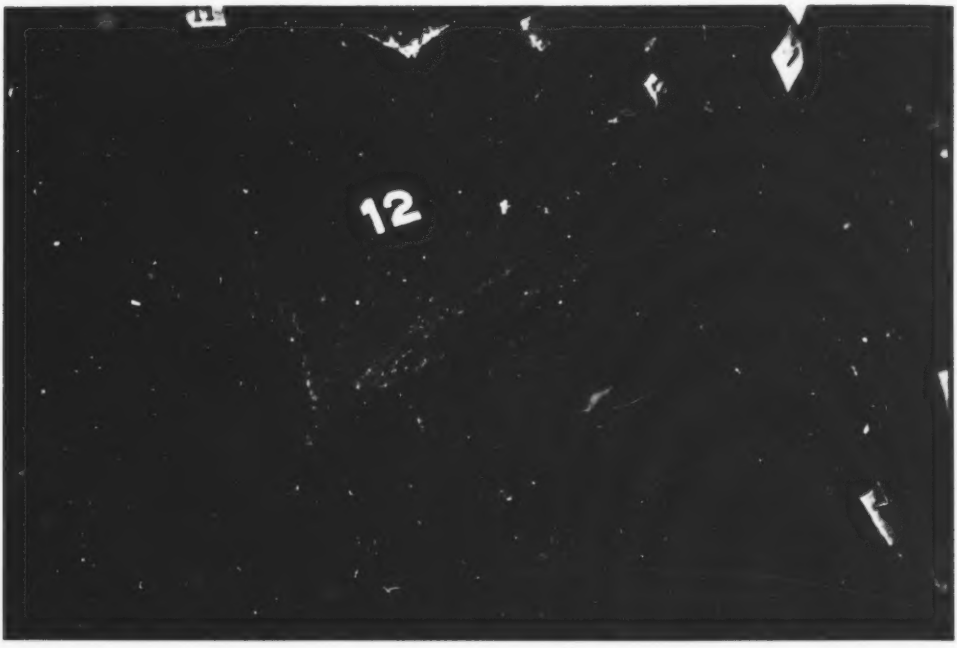


FIGURE 9. Exposed wooden corner of bedding box after pedestalling. Located south of the Commandant's Quarters, Fort Malden. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no.4H-2263T.

installation along the south and west property line. To assess the project, we instigated a five-metre interval testing regime. In total, twenty-one test pits, measuring 0.40m square, were opened within the construction corridor.

Initially, we excavated five units along a transect running 1.0 metre north of the proposed fence line. In each unit, testing uncovered cultural remains. A buried sod, sealed by a demolition layer and found at the depth of 0.45 metres below grade, contained early 19th century material. Fill dating to the 1870s capped this demolition deposit. Above the fill lay a late 19th century occupation. Excavations found it to be subsequently sealed by an early 20th century 'A' Horizon and a mantle of dense clay. The clay represents 1913 backfill from a basement excavation of a nearby house. Finally, a layer of modern sod covers the study area. The transect testing uncovered many features including: two post holes, a stone foundation of either a coach house or stables, a cobbled thoroughfare, the stone foundations of the Commandant's Quarters, internal sleeper supports, and an associated log drain (Figure 7). Because of these discoveries, we opened additional test pits directly along the property line, with each excavated unit serving as a fence post location.

Excavations revealed strata consistent with that already found. Beneath the 1913 basement fill lay two 19th century occupation deposits and an early buried sod line. The presence of mortar fragments within the historic occupation layers suggests localized demolition/repair activities. Such renovations to the property are

documented in the 1840 estimates for Fort Malden (Carter-Edwards 1980). Our investigations detected at least two building phases for the stable/carriage house foundation. Landscape features, so evident in Catherine Reynolds' contemporary pastoral depiction of the quarters (Figure 8) were suggested by the pits, planting beds and fence posts found about the southern precinct of the property (Figure 9).

All units excavated along the west property line produced similar stratigraphic sequences. Characteristically, an early buried sod lay below an occupation layer covered by recent sod development. The only exception is in the extreme southwest portion of the property where an excavated boat ramp down to the Detroit River has eradicated the original buried 'A' and 'B' Horizons. Artifacts recovered from the buried sod include the typical sheet scatter of pearlware and creamware. Several Aboriginal items including chert drill bits, chert flakes, and fire cracked rock were uncovered primarily along the river's crest and away from the quarters proper.

While the installation of the fence was non-negotiable, park staff did alter its alignment to protect those features discovered during our investigations. In several instances, the intervals between fence posts were modified in order to straddle sensitive areas. Although the construction and subsequent demolition of the Wilson bungalow have impacted on the historic resources, we now know the disturbances are localized and limited. Encouragingly, many resources associated with the early years of Fort Malden remain intact.

COMMISSARIAT OFFICE, AMHERSTBURG

Now temporarily housing the Friends of Fort Malden retail outlet, the Commissariat Office at Amherstburg once served the adjacent Navy Yard establishment and the garrison of Fort Malden. Since its transfer to Parks Canada in 1983, intermittent upgrades to the restored structure have resulted in several archaeological investigations and mitigative interventions (Last 1995). The latest occurred during the summer of 1999 when the Town of Amherstburg proposed to install a brick paved sidewalk along the eastern edge of the property.

Limited advance warning and tight construction schedules precluded testing of the area before the sidewalk installation. As a result, archaeological intervention was limited to monitoring during the construction phase of the project. This strategy appeared appropriate since past findings in the area suggest that the area was free of historic features. Indeed, our investigations found this to be the case.

The stratigraphic sequence for the corridor was surprisingly uniform throughout its 44.7 metre length. The most recent deposit consisted of a moderately thick layer of a sod and recent soil. Beneath it lay naturally occurring 'B' Horizon clays. A layer of levelling fills was encountered within the southern portion of the study area. Sandwiched between the original and most recent sod layers, it was apparently deposited to fill a naturally-occurring depression that sloped toward the south.

Besides establishing the stratigraphic sequence for the eastern sector of the property, nine service corridors were recorded. They include several sprinkler systems, and hydro, gas, water and sewer lines. While all date to the 20th century and have little inherent historic value, their documentation is beneficial to the management of historic resources. Knowledge of these services will help future site development in several ways. Before the investigation, we had little information about the services predating Federal ownership of the property. Town records regarding the location of the Commissariat Office service lines are vague at best, resulting in undue exploratory trenching whenever upgrades or maintenance is required. The installation of the pathway provided a pas-

sive way of uncovering services trenches without the need of excessive excavation. As important, armed with the knowledge of their location, we can confine future site services to existing corridors and thus limit further attrition to in situ historic resources.

REFERENCES

Carnochan, Janet
1973. *History of Niagara.* Reprint of 1914 edition. Canadiana Reprint Series No. 58. Mika Publishing, Belleville, Ontario.

Hughes, Quintin
1991. *Military Architecture.* Revised and expanded version of the 1974 edition. Beauford Publishing Ltd.

Last, Joseph H.
1995. "Military Sites Archaeology, Parks Canada, Ontario Region: 1994". In *Annual Archaeological Report, Ontario (New Series)* 6:8-13. Ontario Heritage Foundation.

1997. "Military Sites Archaeology, Parks Canada, Ontario Region: 1996". In *Annual Archaeological Report, Ontario (New Series)* 8:87-95. Ontario Heritage Foundation.

1998. "Military Sites Archaeology, Parks Canada, Ontario Service Centre: 1997". In *Annual Archaeological Report, Ontario (New Series)* 9:117-130. Ontario Heritage Foundation.

Last, Joseph H., Peter Lane, Randy Johnston, Charles Burke and Lorene Jacobs
1985. Report on the 1981 Excavations at Fort Wellington, Prescott, Ontario. Microfiche Series No. 169. Parks Canada, Ottawa.

McConnell, David
1977. *A Study of the British Military Buildings at Niagara-on-the-Lake, 1814-37.* Manuscript Report No. 191. Parks Canada, Department of Indian and Northern Affairs, Ottawa.

Mills, Stephen
1997. "Salvage Archaeology at Parks Canada, Ontario Region." In *Annual Archaeological Report, Ontario (New Series)* 8:96-103.

Wilson, John P. and Linda D. Southwood
1976. "Fort George on the Niagara: An Archaeological Perspective." in *History and Archaeology No 9,* Indian and Northern Affairs, Ottawa.

SUMMARY OF THE 1999 ARCHAEOLOGICAL INVESTIGATION AT THE ALEXANDER MACKENZIE GRAVE SITE, SARNIA, ONTARIO

STEPHEN MILLS

INTRODUCTION

Alexander Mackenzie was Canada's second Prime Minister, holding office from November 7, 1873 until October 9, 1878. Born in Scotland in 1822, Mackenzie moved to Kingston, Canada West in 1842. He later moved to Sarnia where he found employment as a stone cutter. First elected to the Legislative Assembly of Canada in 1861, Mackenzie went on to become the elected member for Sarnia in the first Canadian House of Commons in 1867. He was chosen as leader of the federal Liberal Party in 1872 and became the Prime Minister on November 7 the following year. While in office, Mackenzie's government was responsible for the establishment of several important political and nation-building institutions, including the Supreme Court of Canada, the Royal Military College of Kingston and the secret electoral ballot. Mackenzie and the Liberals were defeated by John A. Macdonald's Conservatives in October 1878 (Lotz 1987: 30-33).

At the age of seventy years and still a member of parliament, The Right Honourable Alexander Mackenzie passed away in 1892. His remains were buried in one of four adjoining family plots in Sarnia's Lakeview Cemetery (Figure 1). Whereas Mackenzie's actual burying place is designated by a simple grey granite marker, the family plot is marked by a 4.3 meter high monument in the shape of a carved sandstone obelisk topped by an urn draped in cloth and oak garlands. Cut into the monument are the names of fifty-one Mackenzie family members laid to rest in the plot, including Mackenzie's two wives and his three children. The plot, which is situated on a slight rise and amply shaded by tall oak trees, dates to the mid-1880s. The earliest interments date to August 2, 1886. This plot also contains several members of the Mackenzie family that died before 1886. These remains were re-interred in the family plot from their original burials elsewhere in the Sarnia area.

Although the Mackenzie grave site is technically a private plot, Alexander's contribution to Canada earned his memory and grave site a special place in Canadian society. The government of Canada has embarked on the National Program on the Maintenance and Enhanced Presentation of Prime Ministers' Grave Sites to ensure that these sites are suitably maintained. The federal department responsible for this program is Public Works and Government Services Canada (PWGSC). PWGSC has forged a close working relationship with Parks

Parks Canada Agency, Ontario Service Centre
111 Water St. E.,
Cornwall, ON K6H 6S3

FIGURE 1. Grave site of Alexander Mackenzie, looking north. Photo by S. Mills. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 127H-3W.

Canada to preserve all of the "built heritage" within the family of National Historic Sites and National Parks. It was through this relationship that Parks Canada conservators and archaeologists became associated with the maintenance of Alexander Mackenzie's grave site.

During the fall and winter of 1998/99, heritage conservation staff from the Parks Canada Ontario Service Centre (OSC) assessed the monument marking Mackenzie's resting place (Heritage Conservation Program Project No. 403128, 1998). The engineers and conservators that carried out this assessment raised a number of concerns. Although the monument was deemed to be in stable condition, gaps beneath its base raised questions about the condition of the sub-surface foundation. Staining and exfoliation also threatened the inscriptions on the monument. As interments were within one metre of the monument, archaeological staff from the OSC were asked to dig two test pits at its base to assess the condition of the foundation.

Surviving members of the Mackenzie family and the staff of the Lakeview Cemetery were informed of the archaeological investigation and permission to excavate and, if necessary, remove artifacts (except human remains) were obtained. Mrs. Pat McLean one of the cemetery's Board of Directors, monitored the work and helped with the background history of Sarnia and in particular, the history of the

Mackenzie family.

ASSESSMENT METHODOLOGY AND RESEARCH PARAMETERS

A team of two archaeologists from the OSC travelled to Sarnia to conduct the Stage 2 excavation. As the site was not within the jurisdiction of Parks Canada, the author received an Archaeological Permit from the Province of Ontario. The actual excavation occurred on April 9-10, 1999. In an attempt to minimize disturbances to the area and the stability of the 12,000 kilogram monument, the two excavation units were kept to a minimum.

Each began as a 50 centimetre by 75 centimetre unit (Figure 2), however, due to the protruding base of the monument, each was extended slightly beneath the base to expose the sub-surface foundation. The unit on the south monument face was assigned the Parks Canada provenience 127H1A, while the one on the east face became 127H1B. Both were dug to a predetermined depth of 50 centimetres beneath the surface. Detailed notes, photographs and drawings were used to record the various stratigraphic layers encountered during the excavation and the condition of the foundation.

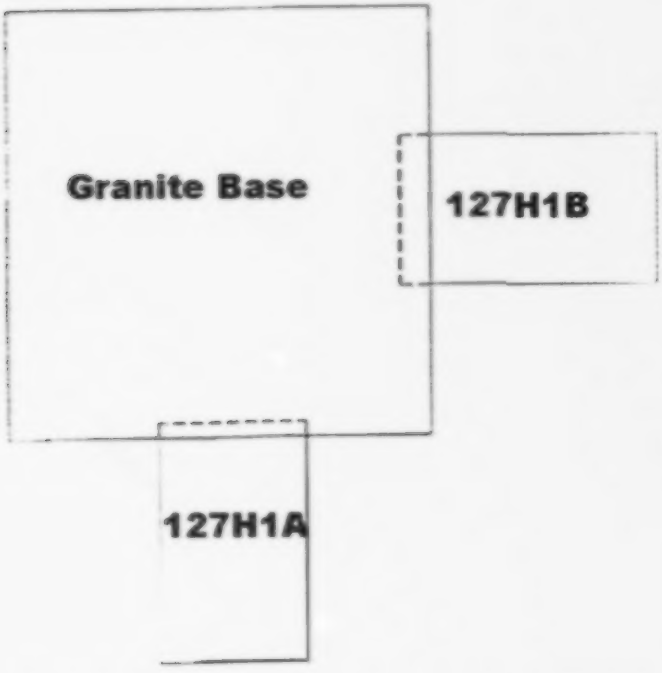


FIGURE 2. Excavation unit locations around the base of the monument. Units are 50 centimetres wide. CAD drawing by J. McKay. Parks Canada, Ontario Service Centre [Cornwall].

FIGURE 3. East wall profile of excavation unit 127H1A. Photo by S. Mills. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 127H-18W.

STRATIGRAPHY

The stratigraphic sequence was similar in both excavation units and consisted of several strata of fill and loam top-dressing covering the builder's trench fill. In the case of unit 127H1B, fill deposits also covered the parent natural soil horizon. Six stratigraphic deposits were recorded in unit 127H1A and nine in 127H1B. Profiles for both show the builder's trench fill deposits against the monument foundation with up to six later redeposited fill and loam layers following in sequential order (Figure 3 and Figure 4).

Several notable strata were discovered including a consolidated mortared deposit, some 5-6 centimetres thick, against the monument in 127H1B. This "working surface" appears to have been the result of a buildup of mortar during the construction of the upper, brick portion of the foundation. Large pieces of mortar were noted at a similar depth in127H1A where mortar was also noted on the brickwork. Remnants of the original stratigraphy predating the monument were also noted in unit 127H1B. A thin buried sod or 'A' Horizon was encountered at a depth of between 22 and 30 centimetres below the surface. Oxidized sands within the sod layer suggest a burning episode, perhaps in association with clearing activities associated with site preparation. Beneath the buried sod lay an intact orange-brown sandy natural 'B' Horizon. Both strata w·re cut into by the builder's trench.

The stratigraphic sequence from the two

excavation units suggests that the monument's builder's trench was 42 centimetres wide on the east side of the monument and at least 75 centimetres wide on the south side. The edge of the builder's trench was not noted along the south side suggesting that it was much wider in this area. To minimize disturbances to the area around the monument, the archaeological excavations were limited to 60 centimetres in depth. The builder's trench continued deeper than the limits of both excavation units. Considering the sandy matrix of the soils in the area, a deep hole was likely necessary to support the monument.

CULTURAL MATERIAL

The investigation produced a small collection of 75 artifacts. All were found in either the sod deposits or buried sod/levelling fill deposits above the construction-related strata. The collection was separated into three groups: mortuary, structural and miscellaneous. Mortuary-related artifacts represent offerings made in memory to those interred at the site. Artifacts from this group consist of coloured container glass (possibly from a vase), vitrified white earthenware, coloured foil and plastic flowers. Although most of these likely date to modern times, some glass sherds and the vitrified ceramic sherd may date to the nineteenth century.

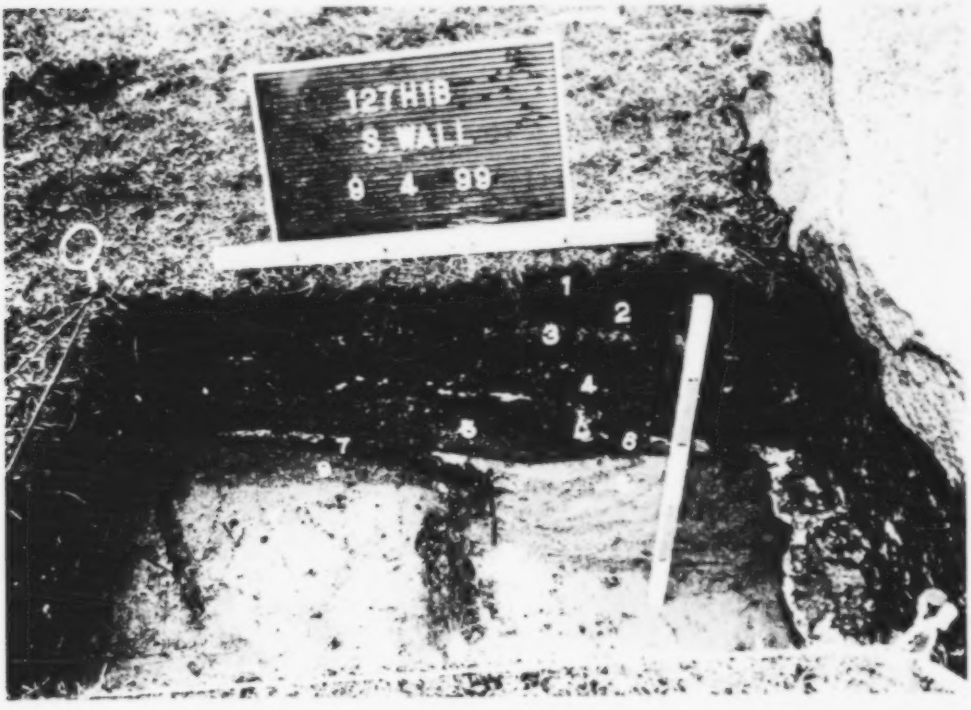


FIGURE 4. South wall profile of excavation unit 127H1B. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 127H-14W.

FIGURE 5. West wall profile of excavation unit 127HB showing detail of foundation construction. Note use of limestone, brick and stone shims. Photo by J. Last, Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 127H-26W

The structural group relates to artifacts that could represent the construction of the monument marking the grave sites. However, as some of these artifacts were recovered from till deposits, they may have been imported to the site during the post-construction landscaping activity. Nevertheless, they include wrought, cut, and wire nails, pane glass, a wire staple, brick, lime mortar and a piece of lead flashing. All of the nails were recovered from unit 127HB on the east side of the monument, and were likely associated with its construction. As the sandy subsoil surrounding the monument was discovered to be loose and unstable, it is speculated that some form of retaining wall was necessary to prevent cave-in of the builder's trench during the construction of the monument. The mortar and brick fragments are also believed to date to the monument construction. The pane glass, wire staple and lead flashing may also have some association with the monument, however, they may have been imported to the site as the landscaping till used to level the site after the monument was constructed.

The miscellaneous group consists of plastic wrap, a plastic comb tooth, a clay tobacco stem, clear bottle/container glass and two fragments of mammal (bird?) bone. These artifacts were recovered from the sod layers and the buried sod layers and likely reflect the general "sheet scatter" of cultural material on the site, instead of any specialized activity.

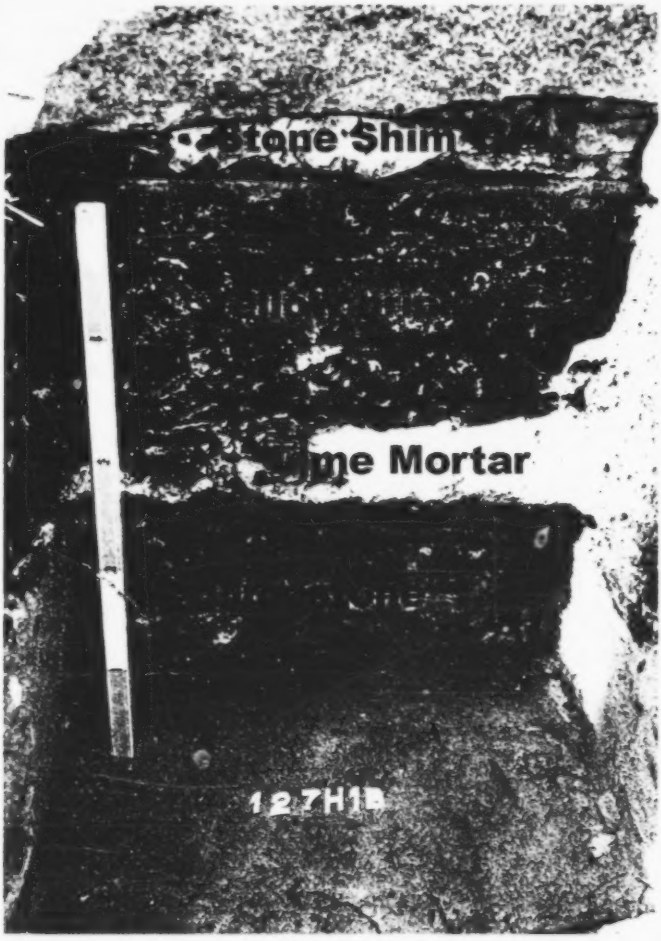


FIGURE 5. West wall profile of excavation unit 127H1B showing detail of foundation construction. Note use of limestone, brick and stone shims. Photo by J. Last. Parks Canada, Ontario Service Centre [Cornwall]. Photo no. 127H-26W.

The structural group relates to artifacts that could represent the construction of the monument marking the grave sites. However, as some of these artifacts were recovered from fill deposits, they may have been imported to the site during the post-construction landscaping activity. Nevertheless, they include wrought, cut, and wire nails, pane glass, a wire staple, brick, lime mortar and a piece of lead flashing. All of the nails were recovered from unit 127H1B, on the east side of the monument, and were likely associated with its construction. As the sandy subsoil surrounding the monument was discovered to be loose and unstable, it is speculated that some form of retaining wall was necessary to prevent cave-ins of the builder's trench during the construction of the monument. The mortar and brick fragments are also believed to date to the monument construction. The pane glass, wire staple and lead flashing may also have some association with the monument, however, they may have been imported to the site in the landscaping fill used to level the site after the monument was constructed.

The miscellaneous group consists of plastic wrap, a plastic comb tooth, a clay tobacco stem, clear bottle/container glass and two fragments of mammal (food) bone. These artifacts were recovered from the sod layers and the buried sod layers and likely reflect the general "sheet scatter" of cultural material on the site, instead of any specialized activity.

MONUMENT FOUNDATION

Sections of the Mackenzie monument's foundation were exposed on its east and south sides. Its construction was uniform on both sides, with the only difference being the number of brick courses present. Three elements to the foundation were discovered: a basal support of limestone (at least three courses were uncovered) followed by two to three courses of yellow brick laid up in the English Common bond, that is one course of stretchers followed by a course of headers. The monument's granite base rests on the bricks with narrow granite stones used as shims to help balance the structure These shims are, on average, 2 centimetres thick (Figure 5).

The foundation was in stable condition. The same can be said for the mortar bonding the various bricks and limestones together. The top course of bricks in unit 127H1A sloped slightly to the east where a 4 centimetre differential was recorded along a 50 centimetre width of the foundation. It is uncertain whether this irregularity was the result of uneven settlement of the foundation or whether it was intentional. It should be noted that the east side of the footing had three courses of brick while the south side had just two courses.

CONCLUSIONS

The one day archaeological investigation provided valuable information on the construction techniques used in building the monument for the grave site of Alexander Mackenzie. By exposing two sections of the monument's footings, it also proved that the foundation was stable and therefore, below-grade stabilization would not be necessary. The discovery of the builder's trench for the monument with structural-related artifacts provided insight into the construction details used during the erection of the monument in the 1890s. The recovery of fragments of plastic flowers and other mortuary-related artifacts shows that the memory of those resting at this site was celebrated in recent times.

The stabilization of the Mackenzie monument will involve surface cleaning and landscape restoration. As the foundation was in good condition, no further disturbance to it was required.

A Historic Sites and Monuments Board of Canada plaque and Canadian flag were erected at the grave site during a ceremony to honour the occasion in August 1999. The ceremony was attended by members of the Mackenzie family, local politicians and Parks Canada officials.

REFERENCES

Lotz, Jim
1987. *Prime Ministers of Canada.* Bison Books, London England

Public Works and Government Services Canada
1998. Condition Assessment, Hon. Alexander Mackenzie Grave Site, HCP Project No. 403128. Report on file at the Parks Canada Ontario Service Centre.

DELTA MILL (BdGa-34)

JONATHAN MOORE

In 1992 the Foundation conducted fieldwork at Delta Mill National Historic Site to record archaeological and architectural features on behalf of the Delta Mill Society. In the summer of 1999 the Foundation returned to the mill to conduct archaeological investigations during restoration work. The restoration project specifications called for the stabilization of the mill's foundations. Eleven days of archaeological monitoring and test excavation of affected areas were conducted. Three areas were of particular concern: the interior wheel-pit and head-race; the north wall at the head-gate; and the tail-gate area. It was anticipated that the 1999 work would supplement the 1992 findings and further assist the Delta Mill Society in its plans to reconstruct the mill's original water-wheel, which no longer survives.

The village of Delta is located approximately fifty kilometres northeast of Kingston, and straddles a mill-stream called Beverley Creek. The mill was built between 1810-1811, replacing an earlier mill which had been built by 1797 near the present structure. About 1861 the original mill race and water-wheel fell into disuse when a turbine and shed were added. During approximately one hundred and forty years of operation, the structure served as a grist mill, saw mill, feed chop mill, an electrical power station, and a feed store. It is the oldest stone grist mill in Ontario.

Engineering contractors installed two cofer-dams at the site to de-water the mill foundations: one at the position of the head-gate and the other at the tail-gate. This allowed archaeological work to be conducted in near dry conditions. A range of wooden and stone structures were found in 1999, providing clues to the operation of the mill throughout its history.

At the juncture of the head-race and wheel-pit, test excavations through twentieth-century fill partially exposed a stout wooden structure which crossed the foot of the head-race. This was probably part of the sluice-gate. Efforts to reach bedrock in the wheel-pit were foiled by perpetual water seepage from freshwater springs which out-paced our pumps, and we had no intentions of conducting underwater archaeological work. It was not possible, therefore, to find the foundations of the sluice gate structure, nor was it pc ible to determine whether remains of the water-wheel survived within the fill.

Near the head-race arch, a dry-laid stone wall, the base for a trash-grate, and the base of a head-gate were found. They are collectively

Cataraqui Archaeological Research Foundation
370 King St. W., Kingston, ON K7L 2X4

interpreted as pre-dating the addition of the turbine hall circa 1861. Excavations in the tail-gate area revealed no structures, but importantly the bedrock there contained several bore-holes drilled at the time of the mill's construction. A search of all exposed bedrock in the mill race and wheel-pit revealed other boreholes which had previously gone undetected. The presence of the boreholes thus corroborated historical evidence that the mill-seat was positioned over an artificial mill channel cut through bedrock. Another important finding, given the Delta Mill Society's plans to build a new water-wheel, was that through archaeological excavation, we were able to determine the level of bedrock at the tail-race. This level determined the minimum elevation at which water would have exited the mill, an important consideration in pin-pointing the original mounting position of the water-wheel.

REFERENCE

Jonathan Moore,
1999. Archaeology at Delta Mill National Historic Site (BdGa-34) in 1999, Cataraqui Archaeological Research Foundation.

Laurier House Archaeology 1998-9 National Historic Site of Canada, Ottawa and The Blacksmith's Midden, Plaza Bridge, Ottawa Locks, Rideau Canal National Historic Site of Canada

Caroline Phillips

Laurier House was built by Ottawa jeweller John Leslie in 1879. It was purchased in 1897 by Sir Wilfrid Laurier and his wife and when Lady Laurier died in 1921 it was left to William Lyon Mackenzie King. King died in 1950 and the house was bequeathed to the Government and people of Canada.

Restoration of the exterior of Laurier House and grounds which began in 1997 (Plitnikas, Phillips and Sheehan 1988: 149-150) continued in 1998 . In January, once the site could be reached after the Ice Storm, Caroline Phillips, Virginia Sheehan and Catherine Scott excavated the foundation beneath the front verandah, covered for the purpose in a heated tent. In June, in slightly more comfortable excavation weather, Caroline Phillips, Virginia Sheehan, Barbara Leskovec and Steve Lohnes were joined by volunteers Suzanne Rochon and Rachel Brooks to complete excavation of the second midden located in 1997 at the northeast corner of the house. On the front lawn, the base for Laurier's flagpole was located along with the remains of an iron fence. At the site of the former garage located in 1997, excavation determined the location of the west foundation prior to installation of a new fence.

Parks Canada Agency, Ontario Service Centre
111 Water St. E.,
Cornwall, Ontario K6H 6S3

The front verandah at Laurier House had evolved from an original landing to the 1901 front porch and the 1913 extension around to the west side. The dates when the various expansions took place are not clearly documented and it was hoped that artifacts might be found during excavation of the foundation for repointing which could add to the scant historical documentation. It was hoped also that some occupation layers dating to the Lauriers might be isolated having been spared later disturbance by the shadow of the porch, particularly seed and pollen samples from Lady Laurier's gardening activity. The stratigraphy at Laurier House is blatantly clear with over a metre of distinct layers of fill having been added to the site since the construction of the house in 1878. The stratigraphy beneath the porch matched that of the previous excavations but there were few artifacts to provide dating, the most common being fragments of coarse earthenware flower pots. The most significant result of these excavations was not archaeological. The excavation unit on the west side of the 1901 front steps revealed a previously unknown structural weakness requiring additional work by the restoration crew.

At the midden location, two additional 1.25 metre units were excavated on the west side resulting in the recovery of several hundred

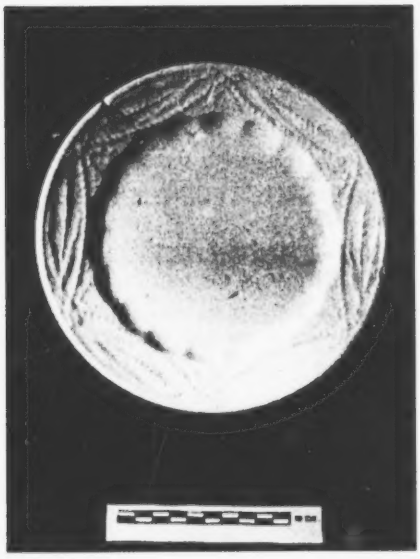


FIGURE 1. White earthenware plate in the Lorne pattern, manufactured by Furnival & Sons, dating to 1871-1890 (Sussman 1985: 71). (Parks Canada Photo; RAO-3261T).

artifacts, many of which mended with the 1997 material. The density of artifacts, however, was not as high as that from the east side of the midden, indicating the majority of the debris was thrown out within 1.5 metres of the northeast corner of the house, possibly beneath the rear porch if it extended beyond the east edge of the house. In addition to domestic debris, building materials were also present in the midden suggesting it may have been deposited during a renovation, most likely before the Lauriers moved in.

In the front lawn several landscape features were excavated. Two small excavation units were opened close to the existing front sidewalk in the hopes of recovering soil samples for seed and pollen analysis from former gardens in this area. Unfortunately, this area must have been previously disturbed when the concrete sidewalk was laid.

The concrete base of the flagpole donated to Sir Wilfrid Laurier by Liberal party supporter Thomas Ahearn was located, its possible location having been noted by the large square patch of dead lawn during the hot, dry 1997 field season. The concrete to form the base had been poured into a hand dug pit. The resulting slab measures 1.05 metre square and is over 1.0 metre deep. In the fill around the concrete base was a large quantity of construction debris including thick layers of plaster. This is probably the debris in the original house construction layers which were disturbed by the excavation for the flagpole base.

While the weeping tile line was being laid from the southwest corner of the house to the Laurier Avenue storm sewer, the remains of the iron fence which once was located at a diagonal from the southwest corner of the front verandah to the corner of the lawn was carefully uncovered with a backhoe. The remains of the fence consisted of a small deposit of concrete at the bottom of each post hole into which the iron post had been set. The iron fenceposts had been cut off about 30 centimetres below surface.

At the site of the 1909 garage, excavations confirmed the survival of the southwest corner of the 62 centimetre wide stone foundation. When the garage was demolished in 1971, 15 to 20 centimetres of the foundation was left in situ beginning at approximately 20 centimetres below surface.

An in-depth study of the artifacts recovered during the 1996-9 field seasons was started in 1999 by Virginia Sheehan for use in the final report. Based on datable manufacturer's marks and pattern designs, the artifacts from the two middens most likely belonged to the original owners of the house, the Leslies, and may have been thrown out as late as 1897 when renovations preceded the Laurier's occupation. The majority of the artifacts recovered relate to the servants and the kitchen. It appears that com-

mon and inexpensive ceramic vessels were used by servants to prepare meals and beverages for their employers, as well as to eat their own meals. The wheat pattern-decorated plates (Figure 1), saucers and cups were without doubt either acquired second-hand or individually, as the variety of pattern variations and maker's marks suggests. The collection also informs us that home canning was preferred over commercial food products. Household cleaning chores are represented by home-made household products while the presence of an iron trivet tells us that at least part of the laundry was done at home. Finally, the only identifiable medicine recovered is a bottle of eye water suggesting that at least one servant suffered from eye irritation, probably a very common ailment for women who were constantly sweeping, dusting, and emptying ashes.

The Blacksmith's Midden, Plaza Bridge, Ottawa Locks, Rideau Canal National Historic Site of Canada

At the close of the 1998 report (Phillips 2000:108-112) it was anticipated that archaeological field work would resume at the Plaza Bridge site in the spring of 1999 when service lines and storm sewers would impact the blacksmith shop midden. Spring arrived early for the second winter in a row, fieldwork was scheduled beneath the Plaza Bridge, this time in January.

The blacksmith shop was built around 1826-7 by the contractor who constructed the Ottawa Locks portion of the Rideau Canal. When construction was completed in 1832, the shop became a Tool Store for the canal and by 1872 when it was torn down to make way for the Dufferin Bridge, it had become the Lock Office. The shop is illustrated in two 19th century drawings (Phillips 2000: 110-111; Figures 1 and 3) but there is no evidence of any midden or mound in these drawings.

Two previous seasons of field work beneath the bridge, combined with information on the depth of the midden obtained when the contractor's bore hole excavations uncovered the south edge in 1998, meant that it was safe to remove one metre of late 19th century fill over the site with a back hoe. A pit 3 metres by 8 metres was excavated, its size determined by the impact on the site of the service line installation. The construction crew then built a shelter from insulated tarpaulins over the pit. Propane heaters in the tent melted the frozen earth over a weekend and a team of seven archaeologists (Figure 2) began excavating the following Monday. A small electric heater kept the archaeologists just above freezing during the day, with the propane heaters set up overnight. Screening took place outside, very rapidly!

An area of 19 square metres was excavated in ten days. The excavation revealed the undisturbed construction period midden which was 27 centimetres thick at its south end, tapering to 10 centimetres thick at the north end. Some time after the completion of lock construction in 1830, the midden deposit had been sealed with a macadamized road surface. This consisted of a 10 centimetre layer of clay covered with approximately 5 centimetres of flat stone spawl in pieces up to 10 centimetres in diameter. This road treatment is labelled on the 1829 plan *A Present State of [Works at the] First 8 Locks, Entrance Valley, Rideau Canal* (PAC NMC 12892) and evidence has been found of the treatment in other archaeological excavations at the Ottawa Locks (Plousos 1984:15).

The stratigraphy of the midden is in summary: sub-soils of reddish-brown sand and rocks, green-grey clay and silty sands; traces of the black organic former surface; the midden deposit of slag, charcoal, glass, ceramic and metal artifacts; the clay base covered by stone spawl of the macadamized surface; and rubble from later filling in of the site, one metre of which was removed for the midden excavation and 1.5 metres of which had been removed dur-

ing the 1998 Plaza Bridge construction. When construction began in 1998 this rubble fill had been covered with two layers of tarmac on a gravel base.

Artifacts from the midden reveal clues about the working life of the blacksmith. He had a diet including fish, bird and mammal as revealed by the bone food refuse. Evidence of his tableware included cups, saucers and dinner plate fragments in polychrome painted and blue printed pearlware, refined white earthenware and plain late creamware. Some fragments of coarse earthenware were probably used in food preparation or storage. His beverages were in dark olive green bottles and a clear glass tumbler and also in something that required the decanter stopper that was recovered. One hundred fragments, representing approximately 40 clay smoking pipes were recovered, some decorated with stars, the sun, fluted ribs, a human figure, Mason's emblems and a ship motif. The smithy was probably a warm refuge to take a smoke break for more than just the blacksmith himself. The blacksmith also had paper work as evidenced by the fragments of ink wells and bottles and the slate pencils. The single gun flint may have come from the Royal Engineers who built the nearby Sappers' and Miners' Bridge and supervised the civilian contractors at Ottawa Locks. The datable artifacts show a clear 1820's to 1830's date range.

The iron artifacts are coated in concretions, similar to material found inside the blacksmith shop in 1998. The seven boxes of blobs have been x-rayed and some have been selected for conservation, a time-consuming project given their state of preservation. Artifacts identified include wrought nails, chain links, nuts, tool fragments and waste metal. A metallurgical study of the 19 boxes of slag and the metal will provide information on what types of ironworking operations were in use, what materials the smithy was using and even the heat of his fires. This will be combined with a study of the artifacts found to provide a full picture on what he was making and how. The charcoal will also be analyzed to determine which species of wood were being converted to charcoal. These studies are expected to be completed in 2002 and will form part of the final report on the archaeology beneath the Plaza Bridge.

It is estimated that a 1.5 metre by 3.0 metre section of the midden may have been lost by the bore hole excavation at the south edge in the fall of 1998. On the east side of the trench, the midden deposit was thinning out so it appears little would have been lost when this area was disturbed by construction of the Dufferin Bridge in 1872 and the Plaza Bridge in 1911. The area between the trench and the east blacksmith shop walls presumably contains more of the midden and this area remains undisturbed. An area 5 metres by 6.6 metres,

FIGURE 2. Parks Canada staff inside a heated tent excavating the blacksmith midden, January 1998. (Photo by C. Phillips; 34H-1547T)

FIGURE 3. Pearlware transfer-printed tea bowls from the blacksmith midden area. (Photo by R. Chan; RAO-3312T)

north of the midden and outside the heated tent, was partially excavated and surface-collected prior to freezing. This 1820s buried surface consisted of a thin black organic layer on sand or clay. Artifacts found on this surface included pearlware tea bowls (Figure 3) and clay pipes, all dating to the early 19th century. This surface had also been capped with the macadamizing.

The author would like to thank the Region of Ottawa-Carleton for funding this excavation and part of the analysis. Thanks also to the Parks Canada conservators who are patiently chipping away the concretions to reveal the iron artifacts for future study.

REFERENCES

Phillips, Caroline
2000. "Plaza Bridge, Ottawa Locks, Rideau Canal National Historic Site." in *Annual Archaeological Report, Ontario, (New Series)* Volume 10 1998: 108-12. Ontario Heritage Foundation.

Plitnikas, Jill, Caroline Phillips and Virginia Sheehan
1998. "Laurier House National Historic Site, Ottawa." *In Annual Archaeological Report, Ontario (New Series)* Volume 9:149-50.

Plousos, Suzanne
1984. The Evolution of the Landscape at Entrance Valley, Rideau Canal: Results of Archaeological Investigations 1980-83. Microfiche Report Series 157. Parks Canada, Ottawa, Ontario.

Sheehan, Virginia
2000. A List of Artefacts (excluding slag) Blacksmith shop & midden. Unpublished report on file, Ontario Service Centre, Parks Canada, Cornwall, Ont.

Sussman, Lynn
1985. *The Wheat Pattern.* An Illustrated Survey. Environment Canada, Parks. Ottawa.

NATIONAL PARKS AND NATIVE SITES ARCHAEOLOGY, PARKS CANADA, ONTARIO SERVICE CENTRE: 1999

BRIAN D. ROSS AND CESARE D'ANNIBALE

ST. LAWRENCE ISLANDS NATIONAL PARK (36H): ARCHAEOLOGICAL ASSESSMENTS

In 1999, St. Lawrence Islands National Park had identified a number of development projects or impacts that were situated on or near known archaeological resources. Before proceeding with these projects, these areas were examined by the National Parks and Native Sites Unit of Archaeological Services, Ontario Service Center, between April 26 and 30, 1999 (Figure 1). For over half of the locations examined this year, development could proceed without further archaeological intervention. For example, even though Northeastern Archaeological Associates (1994:25-39), on contract to Parks Canada in 1993, had discovered six (6) separate archaeological sites - - four small Native Period camps and two small historic debris dump sites on Endymion Island (36H29), intensive examination showed that two proposed dingy dock locations were clear of cultural resources. Systematic testing also found that a new campsite at the east end of Grenadier Island (36H16) would not endanger cultural resources, even though Northeastern (1994:111-114) had discovered both Historic and Aboriginal cultural resources clustered around the near-by historic Heffernan's Restaurant and Ice House.

Parks Canada Agency,Ontario Service Centre
111 Water St. E.,
Cornwall, Ontario K6H 6S3

Dr. J. V. Wright (1978:13-15), then of the National Museum of Canada, found a rather substantial Middle Woodland camp on Beaurivage Island (36H13) that was verified during a 1987 survey by Parks Canada archaeologists (Ross and Dunlop 1993:46-49). At this time, three other sites were also found: two small Aboriginal camps and a larger camp/quartz quarry site. In 1999, the Park proposed up-grading the privy located near this quarry site. While one Native Period artifact was found during shovel testing around the privy, the majority of material recovered was historic Euro-Canadian, dating to the late 19th and 20th centuries. At the time, it was believed that the earliest historic use of the island began in 1904 when the island became part of the national park. The presence of 19th century artifacts on the island was, therefore, unexpected and potentially important. Further monitoring of the site during the privy repairs, however, failed to discover additional Aboriginal or 19th century material (Heritage Quest 1999).

A substantial historic site was, however, discovered during the 1999 work on Beaurivage. This site consists of a readily identifiable house

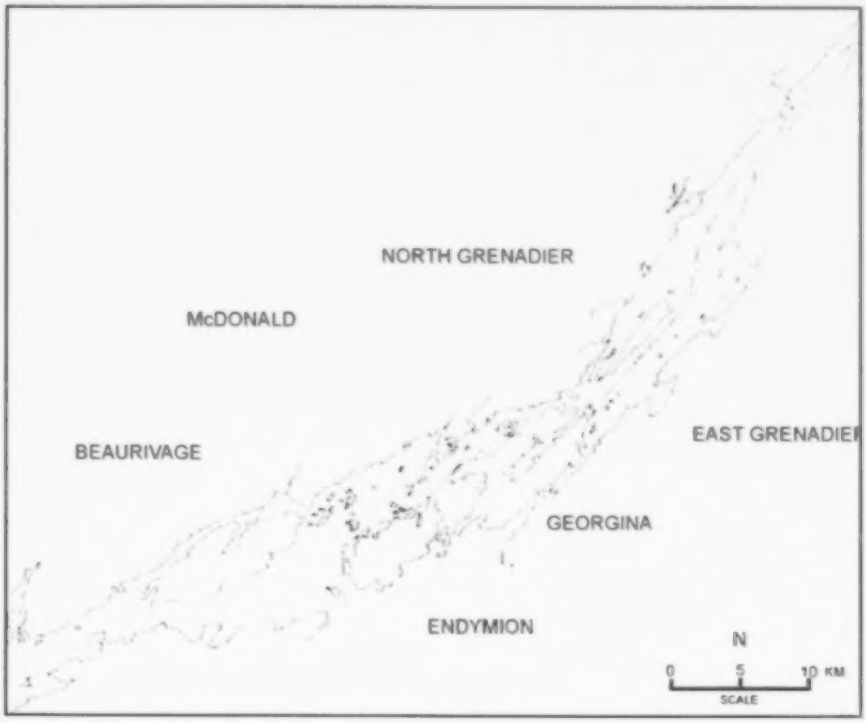


FIGURE 1. Map of St. Lawrence Islands National Park (36H) showing the location of 1999 archaeological investigations (original map by C. Tourangeau).

depression with a stone lined half cellar feature. There are at least another 5 smaller depressions associated with this house depression; some of which also have stone lined components. These likely served as outbuildings (i.e., sheds, coops, outhouses, etc.) associated with the main dwelling. Although early 20th century material was recovered from the ground surface, this site could date to the previous century. The presence of such a complex of structural features on the island had previously been unknown. Since Beaurivage was ceded to the Crown directly from the local First Nation, it is conceivable that these features are the remains of an historic Aboriginal homestead.

In 1978, Dr. Wright (1978:16-18) found a few Native Period artifacts along the northwest shore of McDonald Island (36H32). Northeastern (1994:40-48), in 1993, found two large sites along the island's southwest shore. Excavations in these two site areas by Parks Canada archaeologists, in 1995, found the area to be surprisingly rich (Ross and D'Annibale 1996:114- 116). Archaeological testing was deemed warranted this year when the Park proposed to move one of its campsites situated in the vicinity of Wright's earlier discovery. Systematic pace-and- shovel testing, though, failed to discover anything of archaeological interest. A new site was, however, discovered

FIGURE 2.. Mitigating soreline erosion at the IBM 22 site (49H25), Navy Island, Niagara National Historic Sites, 1999.

on the island that consists of 18 rectangular building depressions. Artifacts retrieved from one of these depressions suggest a date of *circa* 1930-40. There are too many such depressions, so closely situated, to be individual cottages. It seems more likely that these depressions indicate a concentrated community such as that of a summer camp or resort. Perhaps this is the location of the sea cadet camp that reputedly operated on the island during World War II.

The North Grenadier Day Use Area occupies the site of the historic Senecal Farm cum Angler's Inn. Concern over both developmental impacts and cumulative effects from altered site use prompted the archaeological testing of the east end of the area this season. Northeastern (1994:80-85) had surveyed the property and noted that it was rich in both Historic and Aboriginal material. Our testing revealed evidence of early to mid 19th century activity and corroborated Northeastern's conjecture that Aboriginal material from the nearby Senecal Field site(s) extended into the Day Use Area. This is a highly complex archaeological site, consisting of at least 3 overlapping occupations: Native encampment, 19th century farm, and 20th century resort. This complexity makes the North Grenadier Day Use Area an extremely sensitive archaeological site. Because of the rich and extensive distribution of artifacts across this site, it was not possible to identify any one area that was devoid of cultural resources and therefore safe for the proposed camp site re-locations. As such, the developments at the Day Use Area were cancelled.

NIAGARA NATIONAL HISTORIC SITES - NAVY ISLAND: THE INTERNATIONAL BOUNDARY MARKER # 22 SITE (49H25).

Navy Island is designated by the Historic Sites and Monuments Board of Canada as nationally significant for two events in the nation's history: the island's 18th century British Dockyard and the 1837 Rebellion. Parks Canada investigations, to date, have retrieved some evidence to support these events, especially the 18th century phase. However, the presence of Aboriginal peoples on Navy Island is proving to be of major significance. Nearly the entire perimeter of the island has produced evidence for this occupation. This presence, however, is being irretrievably lost to uncontrollable shoreline erosion. With this problem buffered, for the time being, at the Parker Homestead site,

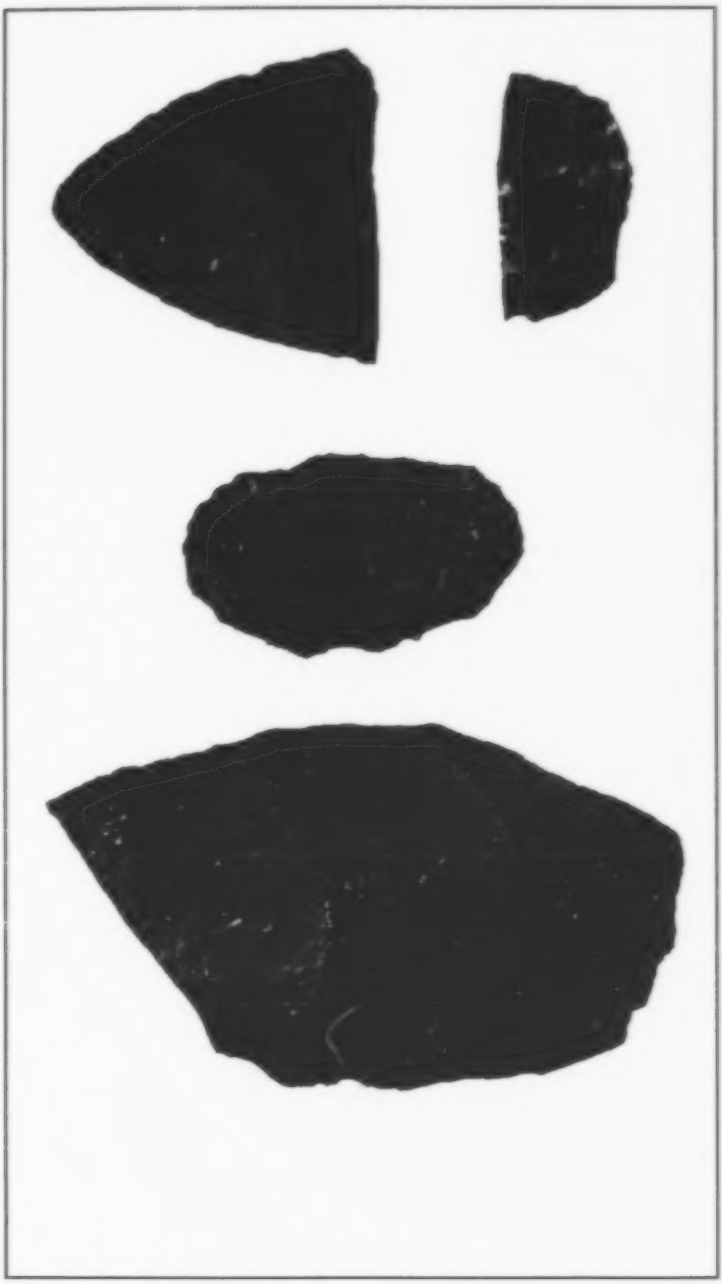


FIGURE 3. A selection of bifaces from the IBM 22 site (49H25), Navy Island, Niagara National Historic Sites, 1999.

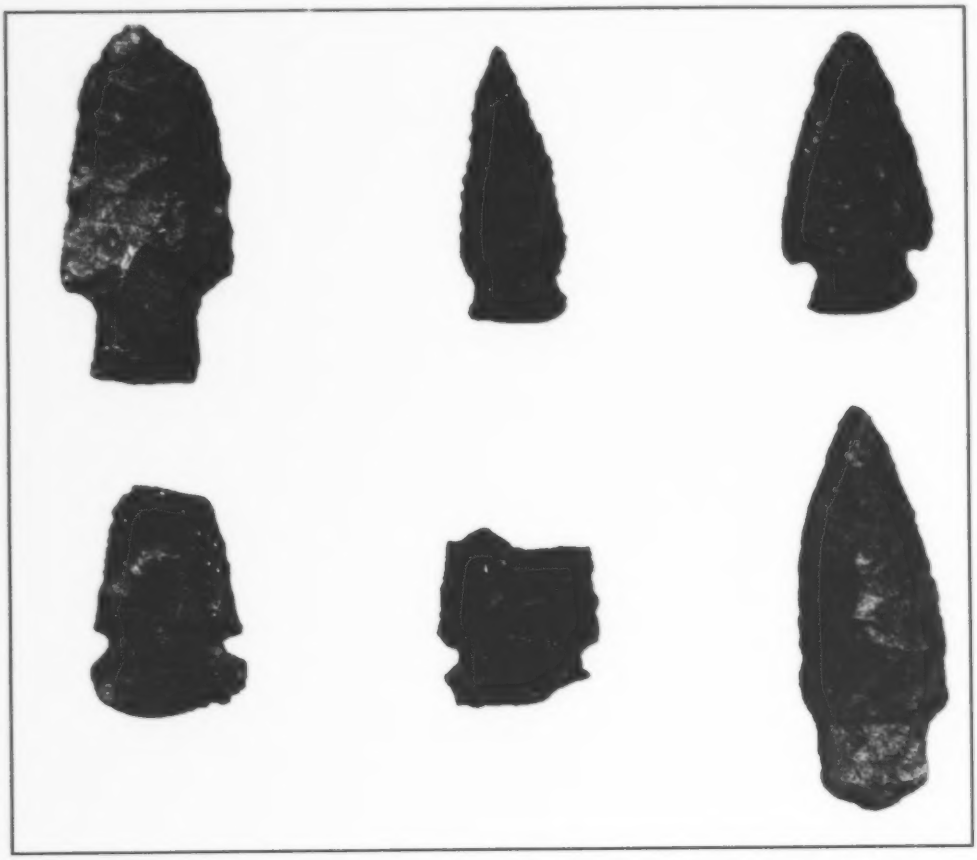


FIGURE 4. A selection of projectile points from the IBM 22 site (49H25), Navy Island, Niagara National Historic Sites, 1999.

further to the north on the island, attention has now shifted to another severely affected area at the International Boundary Marker #22 site (hereafter known as "IBM 22"). While the site had been previously tested in 1997, the 1999 season was the first attempt at full scale mitigation, salvaging 36 square metres of shore through excavation (Figure 2).

As previously identified (Ross et al 1998:163-165), the most significant components of the IBM 22 site remain the Late Archaic and Early Woodland periods. Evidence of subsistence activities began to be more pronounced during the 1999 field season and the recovery of 84 utilized flakes, seven scrapers, six spokeshaves, and two sandstone abraders indicate that a habitation area may lie further inland. Only a small number of features were identified that relate to the Aboriginal occupation. These features included a 40 centimetre square, 50 centimetre deep pit and the remnants of scattered hearths.

The conspicuous absence of finished lithic tools, as opposed to the abundance of debitage, suggests that the site functioned foremost as a manufacturing site overwhelmingly focussed on biface reduction (Figure 3). An enormous amount of thinning and retouch flakes indicate that bifaces were being shaped into their final form here. The increasing frequency of debitage and biface recoveries since the first excavation season in 1997 suggests that we are approaching the locus of production. Just as in the 1997 season, a number of distinct production areas were localized from the background scatter of flakes. These were identified as specific task oriented zones. Activity areas focussed on initial biface reduction, producing large trimming flakes, were clearly segregated from secondary thinning and final biface reduction areas.

All stages of biface reduction are accounted for in the chipped stone assemblage. One example of a large initial stage biface blank was recovered. The majority however represent intermediary to final stage blanks. With the exception of one complete biface, the rest were fragmentary, probably broken during reduction. Despite being complete, the specimen can be classified as a discard since one of its dorsal faces exhibits a massive flaw in the form of a pronounced and isolated medial knob which could not be removed. In total, 17 biface fragments were found, one of which is a Meadowood type. The number of primary flakes is low in proportion to the biface reduction aspect of the industry. However, their presence does imply that some initial core reduction was occurring on site. Large primary flakes may also represent blanks intended for biface reduction. The occurrence of eight marginally retouched primary flakes offer evidence for this alternate type of reduction technique.

Subsequent projectile point manufacture from these blanks could have occurred on site as well (Figure 4). However, of the 7 projectile points recovered, only one could fall into this sequence. The rest show some form of use, damage, and re-sharpening. The point types identified include three Late Archaic varieties: Vosburg, Genesee, and Lamoka. The Early Woodland period is represented by two Meadowood side notched points. An Early Woodland stemmed point could be a "Cresap" stemmed type.

With the exception of three items, all of the chipped stone recovered consisted of Onondaga chert. Similar raw material preferences are a common pattern in the Niagara region. The other raw material on the site derives from Ohio. It consists of two retouch flakes of Upper Mercer chert and one large Flint Ridge core.

Late Woodland occupation of the site is restricted to a few ceramic sherds, one of which is a Neutral rim. The sparse evidence for this period indicates ephemeral use of the area for the purposes of resource extraction by small groups. The location of a major Neutral cemetery, the Van Son site, on the northwest tip of Grand Island (White 1972:64-65) places Navy Island within the sphere of Neutral groups and is without doubt responsible for the presence of these artifacts at the IBM 22 site.

The historic occupation forms the next major phase at the IBM 22 site. Although the late 19th and early 20th century Bolender homestead is nearby (Kennett 1991:48-52), little of this occupation is found on site. Instead, the material points to the mid 19th century as the predominant period of occupation. This phase in the history of Navy Island is poorly documented. The sparse documentary evidence points to a number of tenants and squatters residing on the island (Nafus 1998:15-17). However, the exact location and ownership of these homesteads is problematical. No building features are associated with this phase at the IBM 22 site. The only sign of historic disturbance to the Aboriginal site is to the east where a post hole and some shallow plough marks indicate the extent of a cultivated field. The

19th century artifacts consist mostly of tableware and coarse red earthenware containers, with some wine and gin bottle glass. Only a few personal items were recovered, including pipes and buttons. Because of the broad date range of the material between the 1840s and 1860s, the possibility exists that this site could have seen action in the Rebellion period during 1837-1838. It is known that the Patriot Army of William Lyon Mackenzie made use of any available squatter and tenant homesteads, as well as constructing a number of crude huts, to house his recruits (Nafus 1998:70).

Parks Canada's excavations at the Parker Homestead site revealed a surprising continuum of human occupation from a substantial Late Archaic and Early Woodland occupation to the 19th century. With the current excavations at the IBM 22 site displaying close similarities in finds and site function, Navy Island is emerging as a significant area for the understanding of the Archaic-to-Woodland transitional phase as well as the poorly documented 18th and 19th century Euro-Canadian occupations. Unfortunately, the relentless erosion of Navy Island's shoreline continues now unabated as funding for continued archaeological salvage has been withdrawn by Parks Canada.

POINT PELEE NATIONAL PARK (11H): ARCHAEOLOGICAL ASSESSMENTS

Point Pelee National Park has had to relocate or alter a number of its facilities. For example, the Maintenance Compound has been moved to the Sturgeon Creek property (located 3.7 kilometres north of the park); the Visitor Reception Centre has been expanded to accommodate the Warden Office; and the existing YMCA "Camp Henry" has been moved to the Group Campground. All of these proposals had the potential of affecting archaeological resources. As such, prior to any development, archaeological survey and/or testing was undertaken at each location by the National Parks and Native Sites team of Terrestrial Archaeologists from the Ontario Service Centre over a two (2) week period from May 31 - June 11, 1999 (Figure 5).

Until now, the Sturgeon Creek property had never been archaeologically investigated. However, its location was thought to hold some promise, as a good location for a Late Woodland village or farming hamlet, because of its proximity to the creek and the shore of Lake Erie. The 3.5 acres area was brushed and ploughed to facilitate an archaeological "walk-over" survey. Our findings corroborated those of the geotechnical investigations of the land in that the soils "consisted of a thin surficial layer of silty sand overlying silty clay till"; that this clay was "inorganic"; and that it was "stiff to very stiff" in consistency to a depth of approximately 4.5 metres (O'Connor Associates Environmental Inc. 1999).

No aboriginal material was discovered whatsoever. A number of pieces of shattered pebble chert were observed, but these appear to be naturally occurring in the somewhat gravelly clay till. Primarily, the cultural material found consisted of such agricultural artifacts as sherds of red earthenware drainage tile, fragments of wooden plant identification stakes, and metal wire. The only nonconforming finds included a single sherd of plain white earthenware and a broken ceramic electrical insulator. The Sturgeon Creek property development was allowed to proceed without further archaeological involvement.

The general locale of the Visitor Reception Centre (VRC) had also never been properly investigated, archaeologically. However, the presence of known cultural resources in the vicinity suggested that the area might contain important material. Even though the immediate area around the building has been badly disturbed by earlier construction and utilities installations, the proposed expansion of the Centre was thought to extend beyond this damage. As such, the accessible portion of the affected area was subjected to an archaeological

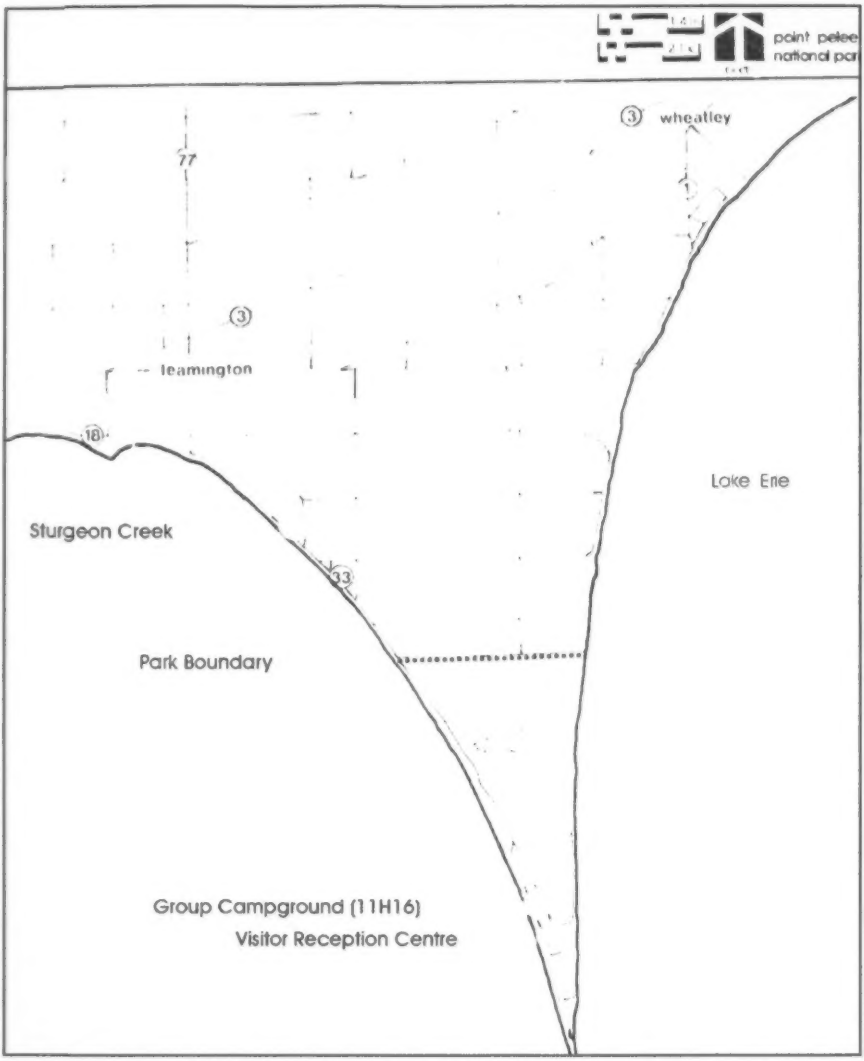


FIGURE 5. Map of Point Pelee National Park (11H) showing the locations of archaeological investigations, 1999 (original map by Hugh, Stansbury & Associates Ltd.).

pace-and-shovel survey. Nothing of archaeological interest was discovered. The area tested revealed either sterile beach sands and pebbles or previous disturbances. The expansion was allowed to proceed.

The reported presence of a 19th/early 20th century site (#11H16) in the Group Campground necessitated the systematic pace-and-shovel archaeological survey of the area prior to its development into the new YMCA

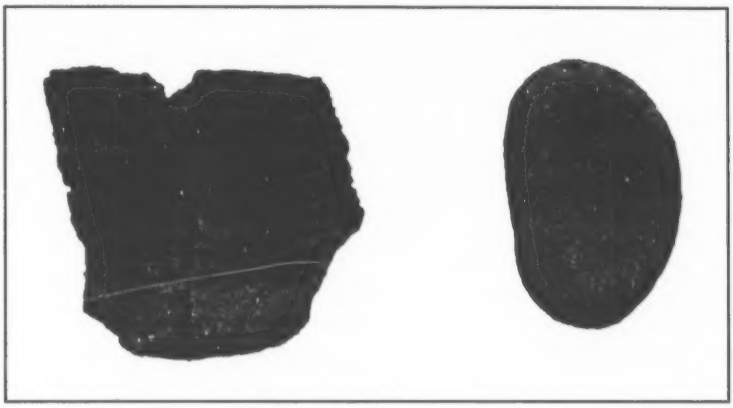


FIGURE 6. Younge Phase ceramic and stone pendant from the Group Campground site (11H16), Point Pelee National Park, 1999.

Camp Henry. And, indeed, the bulk of the cultural material was historic, consisting of glass, red earthenware flowerpot sherds, drainage tile fragments, and wire nails that suggest an agricultural/horticultural activity on site. Throughout the testing, it was also observed that large tracts in the study area had a buried hard-packed horizon reminiscent of a macadamized roadbed. This macadamized layer likely dates to the early 20th century and could denote the locations of non-extant roads, paths and structures associated either with early Park facilities on site or with earlier cottage and/or homestead occupations.

Aboriginal material was discovered in five areas of the Group Campground. In three of these areas, around the pump house, septic field and west campground, the Native artifacts appear to be isolated occurrences, consisting mostly of chert debitage. Of particular interest, was the discovery of a stone pendant (Figure 6). This Aboriginal material all came from below the macadamized horizon and is likely associated with the more concentrated discoveries in the East Campground and adjacent Southeast Meadow areas.

The East Campground produced more Native artifacts than any other area of the Group Campground. Most of these consisted of waste lithic flakes, but one formal flake scraping tool was also recovered. Of particular importance was the discovery of a number of Native pottery sherds that mend to form a single decorated piece. The discernable decorative motif consists of an incised triangle infilled with incised oblique parallel lines. This is suggestive of the *circa* A.D. 800 - 1200 Younge Phase of the local Western Basin Tradition. The Southeast Meadow had the highest ratio of Aboriginal vs. Historic artifacts at the Group Campground. All Aboriginal recoveries from this area consisted of waste lithic flakes, suggesting that the manufacturing and recycling of stone tools were major activities of the site. The Aboriginal cultural resources discovered in these two adjacent areas appear to form a single Aboriginal occupation event, probably a small, seasonal camp site.

TRENT-SEVERN WATERWAY NATIONAL HISTORIC SITE: HEALEY FALLS MITIGATION (45H21,22)

Archaeological mitigation at Healey Falls continued in its fourth year with a four week season during June and July 1999. The excavations are part of a multi-year programme intent on salvaging cultural material threatened from imminent loss as a result of uncontrollable water erosion. This year's salvage excavations were concentrated at the southernmost extent of the site, where lateral erosion is at its greatest. This sector is located at the base of a limestone cliff and along the shore of a low lying wetland. The annual release of water from the Trent-Severn Waterway control dam, located above the site, continues to have a severe impact on the integrity of the site. During the 1999 field season one such water release episode forced us to abandon the site for a number of days until water levels subsided (Figure 7). Despite this interruption, which totally inundated the excavation area, a total of 66 square metres were excavated in this sector.

The importance of Healey Falls as a major portage site along the Trent River continued to manifest itself. Previous work has identified Aboriginal occupation here, beginning with the Late Paleo-Indian period and extending through to European contact. The variety of finds from the 1999 season provided more confirmation of this presence. The earliest finds recovered consisted of a point with a bifurcate base and an "e-notch" point dating to the Early Archaic. In particular, a number of diagnostic artifacts were retrieved to support a strong Middle Archaic presence. The projectile point types (Figure 8) found which are characteristic of this period include four Otter Creek, two Brewerton, two Normanskill and an Eva point. The Laurentian Archaic Tradition is a major component at Healey Falls. This tradition is typically characterized as having a well developed ground stone industry. This aspect is overwhelmingly evident at Healey Falls. The production of axes formed one of the major industries on site. Abundant chlorite schist debitage from all stages of axe production is in evidence. In total, 35 celt preform fragments and 9 finished axe fragments, including one complete specimen, were recovered this year.

The key diagnostic artifact type for the Laurentian Tradition present at Healey Falls is ground stone projectile points. A general overview of ground point distribution in Ontario demonstrates that these implements

FIGURE 7. The Healey Falls site (45H21), Trent-Severn Waterway, inundated by flood waters, 1999.

FIGURE 8. A selection of projectile points from Healey Falls (45H21), Trent-Severn Waterway, 1999.

represent a small proportion of the lithic assemblage of any site. Healey Falls, however, is proving to be exceptionally rich in this type of artifact. Two nearly complete ground points and ten fragments were recovered in 1999 to augment the already large number of such points from the site (Figure 9). In addition, the presence of three preforms indicates that these were being manufactured locally. Wright's (1962) pioneering study of the distribution of ground stone projectile points localizes their concentration in Eastern Ontario, with the Trent-Severn system in particular accounting for two/thirds of the finds.

The Late Archaic is another period which has always been well represented at Healey

FIGURE 9. A selection of ground stone points and preforms from Healey Falls (45H21), Trent-Severn Waterway, 1999.

Falls. This year's recoveries were represented by three Snook Kill and six unidentifiable stemmed points. During this phase, other locally derived raw materials, such as quartzite and Gull River chert, were being utilized for the manufacture of these points. Thirty-six incomplete or broken biface fragments provide ample evidence for the importance of the site as a manufacturing centre. Other subsistence activities are suggested by 13 fragmentary projectile points; 16 scrapers; 6 spokeshaves; 6 wedges; 23 utilized flakes; and 10 worked pieces of bone, including a harpoon point.

Compared to other seasons, material dating to the Woodland period was weakly represented by a Meadowood biface blade and five early Middle Woodland ceramic vessels. Similarly, Fur Trade material continued to be sparse. However, the recovery of a brass/copper tinkle cone and a glass bead attest to the previously confirmed use of the site during the 18th century . Continued evidence for the historic dam building phase was also recovered. This evidence consisted mostly of early 20th century tableware, food consumption and storage related artifacts. Personal artifacts account for the other major part of the Modern assemblage.

PUKASKWA NATIONAL PARK (28H): PIT SITE INSPECTION AND DOCUMENTATION

1999 represented the 6th year of intensive and

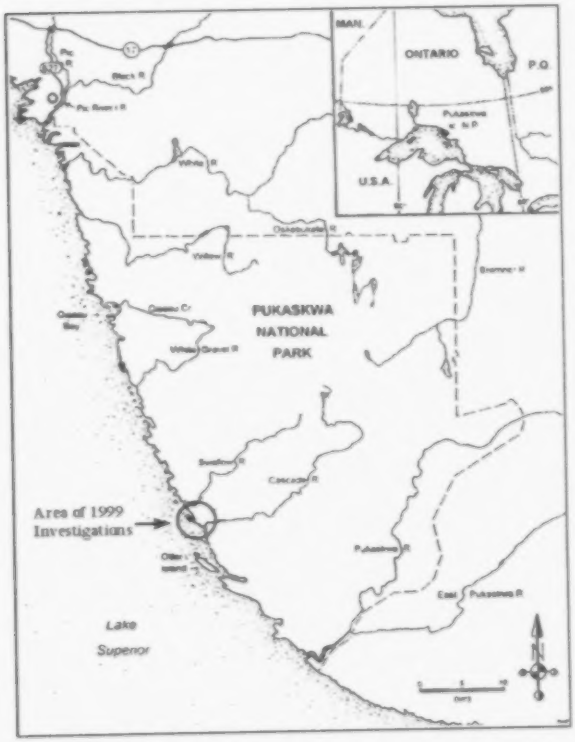


FIGURE 10. Map of Pukaskwa National Park (28H) showing the area of archaeological investigations, 1999 (original map by R. Favacque).

systematic inspection and documentation of Pukaskwa National Park's significant concentration of petroform features (more commonly known as "Pukaskwa pits"). This year's investigations brought the programme to the mouth of the Swallow River (Figure 10), exploring three previously unidentified relict beaches and six petroform sites. Most of the sites visited this year are located inland from the lake shore, on relict cobble beaches that are not visible from the water. As such, because of their isolation, most of these sites have been overlooked by previous archaeological surveys.

The South Triangle II site (28H89) is such an interior site with at least three well defined cultural features: an exceptionally distinct hearth, with a well preserved wind break constructed along its northern rim, and two simple pits, both likely opened cache pits. There are also a number of vague rock alignments that could possibly be post holes, simple hearth rings, and pavés. This may have been a temporary campsite or stop-over. The neighbouring South Triangle III site (28H86) is only 0.16 kilometres south of 28H89 and appears to be situated upon an extension of the same interior relict beach formation. There are three petroforms located here (Figure 11): a mound feature and two pavés. The mound appears to be an unopened cache. The pavés are the living floors from inside such temporary structures as teepees and wigwams; and both are roughly rectangular in outline. One pavé has an interior hearth feature. There is also a roughly flattened area near the mound that might represent an informal/communal activity area. This appears to be a small, temporary campsite for two cohabiting parties of approximately 4-5 individuals.

Also located inland from the shore, the North Singing Stones II site (28H88) contains a single, recognizable petroform: a large, simple circular pit. A distinct pile of stones located beside the rim of this feature suggests that this may be an opened cache pit. This may have been a highly transitory site, briefly visited by only a few individuals apparently intent upon caching something and then retrieving it. The Lower Agawinogwad site (28H87) is a small site, consisting of two petroforms, located quite

far inland from the lake shore, on a high relict beach terrace. Due to its isolation, no previous archaeological surveys have visited this site. One feature is a simple, semi-circular wind break or blind perched along the terrace edge. A simple hearth ring is located to the south-east. This appears to be a very small, temporary hunting camp.

Just to east of Lower Agawinogwad, on the same relict beach formation, but on a higher terrace, is the Upper Agawinogwad site (28H66). This site was originally discovered by Remi Farvacque (1994:19-20) when he reported finding a "trench among very large boulders". Our work, in 1999, identified five more features here and recognized the very real possibility that many more obscure features likely exist amongst the jumble of boulders at the back of the terrace. The identifiable features include two large rectangular pavés, a walled pit, two simple wind breaks or blinds, and a simple conical pit (likely the remains of an opened cache). The walled pit is likely the originally misidentified "trench" feature. It is hypothesized that walled pits served as semi-subterranean dwellings, designed to shelter the occupant(s) from lashing winds. The pavés are remarkably distinct. One pavé is quite complex, with an interior hearth, small storage pit and an adjacent (attached?) mound. It is unclear whether this mound is an unopened cache or a collapsed wall. Upper Agawinogwad appears to be a medium sized habitation site, although the differences in feature types, from the pavés at the front of the site to the simple pit and blinds at the back, may suggest at least two different periods of occupation.

Unlike the other sites examined in 1999, the Swallow Bay site (28H64) is located right on the Lake Superior shore. It is an enormous and highly visible cobble beach. The site was originally named the Nap site (Borden = DbIm-9) when it was first discovered by K. C. A. Dawson (1975:64-67) during his 1974 survey of the park. Farvacque (1994:19) visited the site in 1994. While Dawson had identified 11 features at this site, Farvacque initially reported "over 50 well defined features ... and 25 other less obvious ... structures". In 1995, when Farvacque (1997:348-358) returned to the site, he believed that he had located 113 cultural features. Unfortunately, our work in 1999 was only able to confidently identify 48 petroforms (and nine of these had not been previously reported). We believe that the discrepancy between Farvacque's work and ours lies in the myriad of vague and tantalizing depressions and alignments that litter this huge cobble beach. It would seem that Farvacque chose to attribute many of these to human activity; while we were less convinced. Nevertheless, this is one of the largest and most complex petroform sites in the Park (if not in the province). There are as many as 18 possible dwellings at this site, including 10 pavés, five semi-subterranean shelters and three walled structures. There are also 24 opened cache pits, two mounds, two hearths, one post/pole support, and one communal activity area.

With only one site out of six located on the shore during this year's investigations, it is interesting to speculate on why so many petroforms are found so far inland. Earlier researchers often postulated that they indicated more ancient occupations at the edge of prehistoric shorelines. But might it be possible that these isolated interior sites actually represent winter habitations purposefully removed from the harsh arctic coast of Superior's inland sea?

GEORGIAN BAY ISLANDS NATIONAL PARK (13H): CAMP KITCHIKEWANA MAPPING

There was a two-fold objective to this year's fieldwork at Camp Kitchikewana on Beausoleil Island, Georgian Bay Islands National Park: 1) to document all surface features associated with

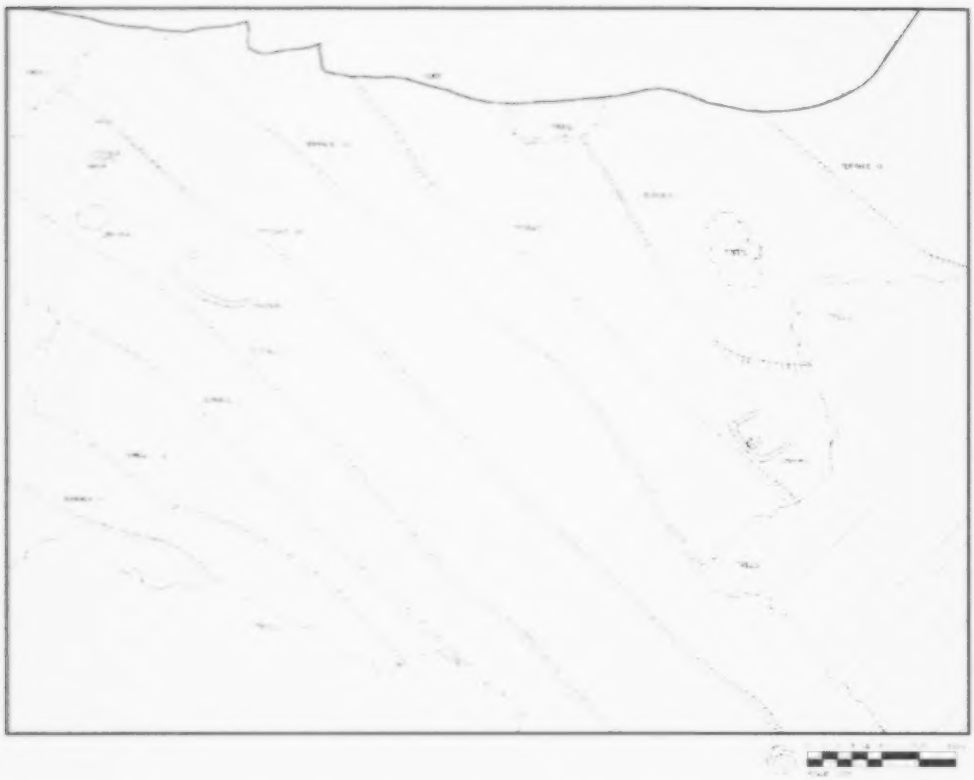


FIGURE 11. Site plan of the South Triangle III site (28H86), Pukaskwa National Park, 1999 (map by J.P.Jerome).

the non-extant historic Ojibway village at the Camp, and 2) to expand upon the 1996 survey of archaeological resources along the Treasure Bay shore. This work was undertaken over a two week period from August 16 - 27, 1999.

During the installation of four permanent survey datums around the core of the camp, both Pre-Contact and Historic material was discovered, mostly nails, pane glass, earthenware, kaolin pipe fragments, Native ceramic sherds, and lithic debitage. Surface collection along the network of trails, roads and activity areas in the Camp, including the shore and beaches, continued to be productive, although the overall quantity of material was noticeably reduced. Major surface finds included a Late Woodland projectile point made on Onondaga chert, a quartz knife/scraper, and a number of scrapers made from other exotic cherts. Historic material consisted mostly of small ceramic sherds. The only Historic items of note include a pipe stem with a "W. White - Glasgow" mark, a slate pencil, and a slate board fragment.

A large portion of this season's work entailed clearing brush from the numerous pits

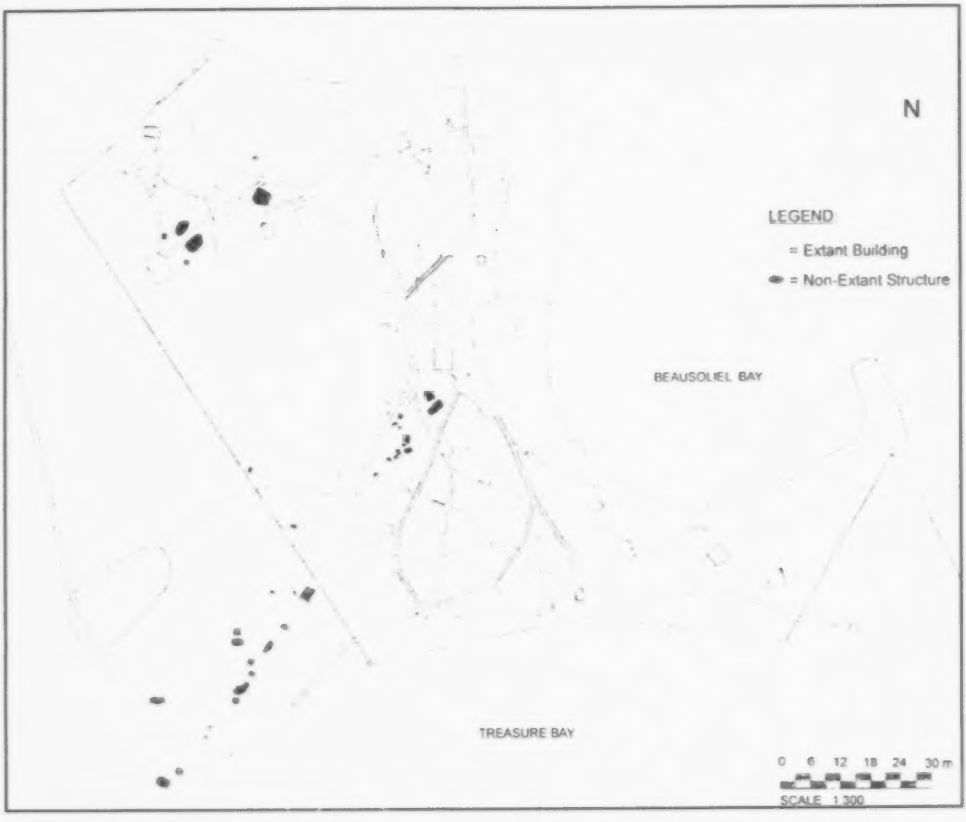


FIGURE 12. Map of Camp Kitchikewana, Georgian Bay Islands National Park (13H) showing the location of visible, non-extant structural remains, 1999 (map by J. McKay).

and depressions found throughout the camp and along Treasure Bay (Figure 12) so that their locations could be accurately mapped and each feature photographed. In total, there are 38 visible features in the immediate area -- all of which are readily identified as either depressions or mounds (there are likely many more, less distinct features yet to be discovered). There are 17 features located in Camp Kitchi proper, designated as 13H12B to 13H12T. The remaining 21 features are located along the high sand ridge that runs along the Treasure Bay shore from the Camp's Baseball Diamond Trail to the Park's main Huron Trail. This area has been identified as "the Chimneys" -- the area where the original nine log cabins had been constructed for the Ojibway (De Gruchy 1970:64). The mounds and depressions in this area have been designated as 13H11C to 13H11Y.

It is assumed that these are cultural features and that they are all historic. It is, though, more difficult to ascertain whether these are all associated with the known mid-19th century Ojibway village occupation or the slightly later Euro-Canadian sand/gravel assessment/extrac-

FIGURE 13. "Juntenen-like" and Middle Woodland ceramic vessel rim sections from the Chimneys site (13H11), Georgian Bay Islands National Park, 1999.

tion activity, without undertaking controlled archaeological investigations. It is unlikely that they are associated with the YMCA since most of these features occur in areas of the Camp that were undeveloped by cabin/facility construction until the 1950's.

Many of these features are distinctly square/rectangular in outline, while others are more oval or circular. Generally speaking, the more rounded features are smaller and shallower than the square ones. A number of the larger, more pronounced square/rectangular depressions are associated with adjacent mounds of fieldstone rubble. These are interpreted as cabin depressions with collapsed chimneys or hearth mounds. The deeper depressions may indicate cellars. Other features may be barns, stables, coops, privies, or other types of outbuilding. However, it is extremely difficult to precisely interpret the functions of the more indistinct depressions located throughout the Camp.

This year, 384 shovel test pits were dug in the area of the Chimneys. Of these tests, 147 pits (or 38%) produced cultural material amounting to 1277 artifacts. Surprisingly little historic material was recovered in the area immediately to the north of the structural remnants of the mid- 19th century Ojibway village. Only 23 artifacts from seven test pits dated to this period. The most significant finds were a pipe stem, some polychrome painted sherds, and a blue transfer print sherd.

Pre-European Aboriginal material, however, was abundant, occurring in all but three of the 147 test pits. Especially noteworthy was the identification of three cooking, boiling, or rendering pits, consisting of fire reddened and fire cracked granitic rocks. This corresponds with the discovery of a similar feature in 1996, in the vicinity of the Huron Trail. Other such rendering features were discovered during the excavation of the YMCA volleyball court (Ross 1994:14).

Native ceramics represented 47% of the Native finds. All of the pottery was representative of the Middle Woodland Period (Figure 13). Eight rim sherds were recovered typical of

this period. Especially noteworthy is the presence of a Juntenen type rim that suggests yet another Algonkian influence or presence at the site. Several other rim sherds are characteristic of the final stages of the Middle Woodland Period.

Lithic material was overwhelmingly represented by Huronia Pebble chert, which makes up 89% of the assemblage. Two test pits produced a large number of pebble cores. Although found in small numbers, the tool group from this chert type is typical of the established trend already noted during the course of excavations at the Camp Kitchikewana Volleyball Court. This local chert type was primarily employed to produce scrapers, wedges, and bifaces. In total four bifaces, one scraper and two wedges were found. Three flakes were utilized. Exotic chert or tool stone represented only 8% of the lithic material. Tools of this material consisted of two scrapers; two wedges; one biface; and six utilized flakes. Quartz and slate, the other major tool stone found at the Camp Kitchi site, were under represented. The only Other lithic find of note was a granitic hammerstone.

The 1999 testing was an extension of the major 1995/96 survey of Camp Kitchi and the immediate Treasure Bay shore (Ross & D'Annibale 1996:112-114; and Ross, D'Annibale & Spence 1997:112-114). The 1996 investigations of the Chimneys area excavated 315 shovel test pits with 175 (or 55.5%) being productive. The corresponding area immediately along the Treasure Bay shore, was also tested in 1996. Out of 288 shovel tests, only 53 (or 18%) were productive. It is readily apparent that the sand ridge facing Treasure Bay, i.e., the Chimneys themselves, is an amazingly rich site. However, this year's investigations have demonstrated that significant archaeological resources continue to the north, towards the Camp's Baseball Diamond, and west, along the Treasure Bay shore .

REFERENCES:

Dawson, Kenneth C. A.
1975. "Archaeological Shore Survey at Pukaskwa Park October, 1974." Manuscript on file. Parks Canada, Ontario Service Centre, Cornwall.

De Gruchy, Susan
1970. 'Our Own Free World' The Human History of Beausoleil Island". Manuscript Report No. 146, Parks Canada, Department of Indian and Northern Affairs, Ottawa.

Farvacque, Remi N. R.
1994. Preliminary Report for archaeology Permit 93-0002H, Pukaskwa National Park. Report on file. Parks Canada, Ontario Service Centre, Cornwall.

1997 Holocene Environments Along the Lake Superior Coast of Pukaskwa National Park, Ontario. Unpublished M.A. thesis, Department of Earth Sciences, University of Waterloo, Waterloo.

Heritage Quest Inc.
1999. Archaeological Monitoring of Privy Line Replacement, 36H13F Beaurivage Island, St. Lawrence Islands National Park, Leeds-Grenville County. Report on file. Parks Canada, Cornwall.

Kennett, Brenda L.
1991. Archaeological Resource Evaluation Navy Island Niagara National Historic Site Volume 1: Descriptive Report. Report on file. Parks Canada, Ontario Service Centre, Cornwall.

Nafus, Roland L.
1998. *Navy Island Historic Treasure of the Niagara Heritage - Archaeology -*

Folklore. Old Fort Niagara Publications, Youngstown, New York.

Northeastern Archaeological Associates
1994. Inventory of Historic and Archaeological Resources for St. Lawrence Islands National Park. Manuscript on file. Parks Canada, Cornwall.

Ross, Brian D.
1994. "Field Season Summary: National Parks and Native Sites Archaeology Programme, Department of Canadian Heritage (Parks Canada), Ontario Region." *Annual Archaeological Report, Ontario (New Series)* 5:13-15. Ontario Heritage Foundation.

Ross, Brian D. and Helen Dunlop
1993. An Inventory and Evaluation of Known Archaeological and Historic Resources Within St. Lawrence Islands National Park. Manuscript on file. Parks Canada, Cornwall.

Ross, Brian D. and Cesare D'Annibale
1996. "National Parks and Native Sites Archaeology (1995), Department of Canadian Heritage (Parks Canada), Ontario Region." *Annual Archaeological Report, Ontario (New Series)* 7:109-123.

Ross, Brian D., Cesare D'Annibale and Kyla Spence
1997. "National Parks and Native Sites Archaeology, Department of Canadian Heritage (Parks Canada), Ontario Region: The 1996 Field Season." *Annual Archaeological Report, Ontario (New Series)* 8:112-122.

1998. "Parks and Native Sites Archaeology, Parks Canada, Ontario Service Centre: 1997." *Annual Archaeological Report, Ontario (New Series)* 9:151-169.

White, Marian E.
1972. "Delineating the Neutral Iroquois of the Eastern Niagara Peninsula of Ontario." *Ontario Archaeology* 17:62-74.

Wright, J. V.
1962. "A Distributional Study of Some Archaic Traits in Southern Ontario." In *Contributions to Anthropology, 1960 Part I.* National Museum of Canada Bulletin 180: 124-142.

1978. An Archaeological Survey of St. Lawrence Islands National Park. Manuscript on file. Parks Canada, Cornwall.

A BIBLIOGRAPHY OF PEER-REVIEWED ARTICLES BOOKS, AND DISERTATIONS ON THE ARCHAEOLOGY OF ONTARIO : 1999

Cunningham, Jeremy
Pots and Incoherent Culture: Recovering Borderlands at the Van Bree Site (AgHk-32). Unpublished M.A. thesis, University of Western Ontario.

Dawson, Kenneth, C.A.
"Archaeologists in the Continental Boreal Province: A Personal Recollection." in *Ontario Archaeology,* Number 67, p. 23-39

Ferris, Neal
"Telling Tales: Interpretive Trends in Southern Ontario Late Woodland Archaeology." in *Ontario Archaeology,* Number 68, p. 1-62

Garrad, Charles
"Champlain and the ODAWA".
In *MidContinental Journal of Archaeology,* v. 24, no.1, p. 57 – 77

Hancock, R.G.V., Aufreiter, S., Kenyon, I., and Latta, M.
"White Glass Beads from the Auger Site, Southern Ontario, Canada." in *Journal of Archaeological Science* 26, p. 907 - 12

Pilon, Jean-Luc
"Book Review." in *Ontario Archaeology,* Number 68, p. 74-76

Rost, R.
Bioarchaeological Approach to Constructing the Buckingham Ossuary Site (BcHb-24) Mortuary Practices. Unpublished M.A. thesis, Trent University

Shen, Chen
"Were "Utilized Flakes" Utilized? An Issue of Lithic Classification in Ontario Archaeology." in *Ontario Archaeology,* Number 68, p. 63-73

Stothers, David M., Abel, Timothy J., and Graves, James R.
"Accelerator-Dating the Weiser Site, Kent County, Ontario: New Perspectives on the Wolf to Fort Meigs Transition in the Western Lake Erie Region." in *Ontario Archaeology,* Number 67, p. 1-22

Sutton, Richard E.
"The Barrie Site: A Pioneering Iroquoian Village Located in Simcoe County, Ontario." in *Ontario Archaeology,* Number 67, p. 40-87

Williamson, Ronald F. and
Christopher M.Watts
Taming the Taxonomy: Towards a New Understanding of Great Lakes Archaeology. eastendbooks,Toronto

Wright, Joyce M.
Numbers: A Message From The Past. Bulletin 16. London Museum of Archaeology, London.